A Study
OF THE
TUBERCLE COMPLEMENT-FIXATION REACTION
WITH BESREDKA ANTIGEN IN THE INVESTIGATION OF PULMONARY DISEASES.

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SINCE the serological reaction as an aid to diagnosis was first applied to tubercle infection by Neisser and Sachs, many workers have investigated the tubercle complement-fixation reaction (T.C.-F.R.). Reference may be made to two recent reviews in which helpful summaries are given.[1 2] The purpose of this paper is to make known the laboratory findings of the T.C.-F.R., employing Besredka's antigen, and their relationship to the findings of the *B. tuberculosis*. We have tabulated the results obtained from the examination of the sputa for *B. tuberculosis* and of the blood sera by the T.C.-F.R., collected from ex-Service subjects as part of a complete routine investigation on each to determine the presence or absence of pulmonary tuberculosis, its activity or arrest. The total number of 6000 were males and include two groups of cases of which approximately two-thirds were examined as out-patients and one-third as in-patients in observation wards. The results in each group were practically similar. We would emphasise that the subjects examined showed various disabilities of a pulmonary nature, due to chest wounds, gassing, pandemic influenza of 1918, chronic bronchitis, &c.; many cases examined were not clinically tuberculous, though a certain number may have been so some years previously or may have more recently developed tuberculosis consequent upon or subsequent to a previous lung condition.

The difficulties and differences of opinion in diagnosis of tuberculosis upon clinical examinations of pulmonary cases, and especially conditions consequent upon gassing or the pandemic influenza of 1918, wherein the X rays reveal pathological changes similar to those found in certain forms of pulmonary tuberculosis, are well known and can be readily understood, so that any practical and reliable aid to specific diagnosis by laboratory methods is a valuable one. Pre-war experience has shown us that for various reasons the *B. tuberculosis* is found in the sputum on repeated examinations in but approximately 40 per cent. of all cases of clinically diagnosed pulmonary tuberculosis, so that further supplementary aids, such as serological investigation, in addition to the search for the organism, have their utility in the same way as they have in certain other microbic infections.

Table I. gives the relationship of results of the T.C.-F.R. when employing Besredka's antigen in cases showing (1) a positive finding of *B. tuberculosis* in the sputum (*a*) at the same date or (*b*) during or after the Great War, or (2) a negative finding at present or past or at both examinations of the sputa. Also is given the percentage of positive Wassermann reactions (W.R.). It is important to have found that a percentage of pulmonary cases under investigation were suffering from lesions due to syphilis. These have benefited by diagnosis and subsequent specific treatment.

Negative Findings.

In Table I. the percentage of negative findings when *B. tuberculosis* was present in the sputum is based on one examination only of the blood. It was not practical to make many repeated examinations, and in the limited number of cases where a second examination was practicable we found some support to the observation, we think first made by Calmette, that tuberculous cases giving a negative T.C.-F.R. at one examination may give a positive finding when re-examined, and a subject giving a negative finding when clinically positive should have the blood-serum re-examined on a further one or more occasions. In this connexion we call attention to Ichok's publication.[2]

May we assume that the specific fixation property detectable in the serum in tubercle infection is dependent on individual response or reaction and that pulmonary disease is an infection of localised activities giving rise to smaller production of this fixation property or so-called antibody than is to be expected and found in other diseases where the infection is at a certain period more generalised. In the generalised tertiary or final stage of tuberculosis the patient is approaching death and natural response and reaction appear limited or absent, so that workers state that the T.C.-F.R. is herein not infrequently negative. In the few (five) cases of whom we have examined the bloods taken at the autopsies which showed death due to generalised tuberculosis, the reaction was, however, positive. In two cases the blood taken six to nine days and in one case the cerebro-spinal fluid taken four days before death, the T.C.-F.R. was positive. In one other case the blood one month before death was negative.

Besredka's experience has shown him that a good antigen of human *B. tuberculosis* alone gives satisfactory results and prefers it to a polyvalent antigen or mixture of human and bovine strains. Accepting

TABLE I.—*Examination by Means of T.C.-F.R. and W.R. on Blood Sera of 6522 Cases with Clinically Doubtful or Positive Signs of Pulmonary Tuberculosis.*

T.C.-F.R. on sera giving *Negative* W.R., 5997. Pos. 1858, B.L. 540, Neg. 3599.									Both T.C.-F.R. and W.R. *Pos.*, 271.		T.C.-F.R. *Neg.* or *B.L.* and W.R. *Pos.*, 254.	
B. tuberc. found in sputum at time of blood test. 310 (*a*)			*B. tuberc.* found in sputum at some period—viz., 1 to 6 years previous to blood test.* 394			Previous results of sputum exams. for *B. tuberc.* not known or neg.† 5293			*B. tuberc.* found in sputum.			
									Yes. 12·9 %	No. 87·1 %	Yes. 0·4 %	No. 99·6 %
Pos.	B.L.	Neg.	Pos.	B.L.	Neg.	Pos.	B.L.	Neg.	—			
84·5 %	6·1 %	9·4 %	40·9 %	6·1 %	53 %	27·1 %	9·4 %	63·5 %	W.R. pos. in 525 of 6522 cases examined = 8 %.			

* Information based chiefly on ex-soldiers' statements: whenever possible on documentary evidence.
† When documentary evidence was obtainable. B.L. = Border-line.
(*a*) Seven of these cases were examined on one, two, or three subsequent occasions at intervals of several weeks or months with a view to ascertaining whether sufficient tuberculous antibody appears at certain periods to cause a positive complement-fixation reaction. Four maintained negative reactions throughout, though *B. tuberculosis* was again found in sputa. One case on second examination gave a weak positive reaction, one case on second examination gave a border-line reaction, and one case on third examination gave a weak positive reaction.

this, we think that were it practicable, by the use of autogenous strains, the percentage of negative findings in tuberculous cases may, and, reasoning from experience of other specific antigen-antibody C.-F. reactions, would probably be reduced. Our tests with autogenous strains have been too few to enable us to form a judgment.

Positive Findings.

The percentage of positive findings when *B. tuberculosis* is found in the sputum is 84·5 per cent., that of doubtful reactions 6·1 per cent., and of negative 9·4 per cent. Regarding the positive findings of the T.C.-F.R. when *B. tuberculosis* has been found previously, it is not possible for us to state for how long the reaction remains positive after the arrest of active diseases. Besredka estimates the persistence may be up to six months.

To consider the case giving a positive T.C.-F.R. finding when there is no evidence of tuberculous lesions on clinical, X ray, or sputum examinations, these are grouped into two categories: (1) when the W.R. is also positive and (2) when the W.R. is negative.

Group 1.—The incidence of the finding of *B. tuberculosis* in positive W.R. cases is shown. That the two diseases occur concurrently, though known, is supported by our figures; but our percentage of positive W.R. which bear close relation with that found at general hospitals in series of unselected cases does not indicate that tubercle is more common in the syphilitic. Of the 246 ex-Service men in whom *B. tuberculosis* was found 36, or 9·6 per cent., gave a positive W.R. That a positive W.R. is not due to tubercle infection has been amply confirmed, but we share the opinion of the early French workers that a non-specific positive T.C.-F.R. is not infrequently found when the W.R. is positive and when Besredka's antigen, which includes the culture-media, is employed.

Group 2.—Where the W.R. is negative and T.C.-F.R. positive and there is no evidence of tuberculosis by clinical or by other laboratory methods of examination, questions are raised which cannot at present be answered by experiment. A prolonged research and keeping of the subjects under investigation can best help in the elucidation of these questions. In our routine procedure we have had a few cases which were clinically non-tuberculous and gave a negative sputum finding and positive T.C.-F.R. and which, returning 6 to 12 months later for re-examination, gave a positive sputum finding. There are, one is aware, a few cases which are not detected clinically, nor by X ray examination. Again, there are cases with subjective symptoms, sometimes classified as latent tuberculosis, which may be cited in explanation of these positive T.C.-F.R. findings. Still we are faced with the fact that a percentage of cases give a positive T.C.-F.R. in the absence, past or present, of the findings of the *B. tuberculosis* or of clinical evidence of tuberculosis of the lungs or other tissues. What gives rise to this positive finding, which is not without analogy in the serological investigations of other infections and the employment of the specific antigen antibody complex? Diphtheria has been cited as a disease so doing, since sera of some patients having received anti-diphtheritic sera gave a non-specific T.C.-F.R. Do also other infections? Willmore[3] found that a generalised, and we that a pulmonary, infection due to species of the closely related streptothrix group gave a positive T-C.-F.R. finding in each case. Also we have to consider the action of constituents or properties in certain sera to combine with the non-specific protein and lipoid colloids in the antigen used.

Doubtful Results.

Those familiar with the delicacy of the complement-fixation reaction of the specific antigen-antibody complex, will appreciate the difficulty that occasionally arises in reading and interpreting results, and we have thought that in compiling our findings it would be more instructive to class the so-called border-line reactions separately. It will be noted that such results occur in all groups, including cases wherein the tubercle bacillus is found at the time of examination with and without clinical evidence of disease, so that the finding cannot be classified as a negative one.

Conclusions.

And now to the significance of these findings and values to be assigned.

Let us introduce our remarks by the wise counsel —Look to the laboratory for aid, not responsibility for diagnosis in clinical medicine. Our principal object is to provide reliable additional evidence to the clinician in the not infrequent difficulties of diagnosis of tuberculosis. Any survey must be on the basic foundation that the living organism is not a machine nor can the chemico-physical activities in the body regulating organic function be brought to manifest themselves in test-tube experiment with mathematical precision of result and facility of interpretation. Progress has come from experiment since and through work upon Koch's original tuberculin test, von Pirquet's skin test, Wright's opsonic index, Neisser and Sachs's, Besredka's, Inman's and Dudgeon's work (amongst others) on the tubercle C.-F.R. Prof. H. R. Dean gave at the 1923 meeting of the British Medical Association a paper stimulating to discussion, and we hesitate to criticise. We cannot, however, admit comparison of the readings and interpretations in opsonic index and C.-F.R., nor that the work of the C.-F.R. has been disappointing, at least in its service to the practitioner. We are optimistic in our view of the development of a still more useful reaction as progress is made, in preparation of the antigen, in our understanding of the rationale of the reaction, and in our knowledge of the pitfalls or non-specific reactions as well as of the findings in the varied stages or extent of the disease and of the response to the two groups of causal organisms with their number of strains. One practical advantage not to be overlooked is, that the T.C.-F.R. can be applied in an out-patient clinic.

Alongside the T.C.-F.R. let us consider the better-known W.R.: what modification it has undergone since Wassermann's original method was published. Workers throughout the world have aided in its simplification and modification, and only in few isolated laboratories does one now see the original technique and employment of a specific antigen and they have determined its great but relative value. A negative W.R. of the blood may be found in a syphilitic infection, and a positive W.R. has been found in other than *S. pallida* infections. To find a blood serum giving a W.R. positive is not per se a diagnosis of active syphilitic infection nor of the assured appearance of a tertiary sign or symptom, nor to find it negative sufficient proof of the entire absence of this disease. But who would dispute the invaluable aid to clinical medicine the W.R. is? Again, let us consider heterologous serological findings. We have seen cases of Malta fever with antibody in the serum binding itself to a high degree with *V. choleræ* and agglutinating it, and the converse holds as first shown by one of us. There is also the well-known example of the agglutination of *B. proteus* by sera of cases of typhus. It may be that in the T.C.-F.R. the tubercle antigen fixes other antibodies in addition to those arising in certain diphtheria cases receiving antitoxin and some streptothrix infections, which have not yet been determined.

At this stage of investigation we consider that the results of the test should carry some weight with the clinical observer and when a positive finding is recorded a very full investigation should be made before ruling out an infection of tuberculosis, a disease of such protean signs and symptoms. The margin of error of negative findings in bacteriologically positive cases is just under 10 per cent. on one examination of the blood, probably less on repeated examinations. As in other serological

reactions one cannot expect more of it than a valuable link in the chain of evidence. When Besredka's antigen is used a W.R. should also be carried out.

Technique.

Tubes.—3 in. × ½ in. are used. These are extra wide to allow of easy mixing of the constituents when the tubes are shaken.

Racks which fit Harrison's water-bath are used, but to admit the wider tubes the holes must be increased to a diameter of ⅝ in. A rack will hold 40 holes of this diameter.

Antigen.—Unit used is 0·3 c.cm. of Besredka's undiluted antigen.

Hæmolytic System.—3 per cent. suspension of sheep's red cells, each c.cm. of which is sensitised with 8 M.H.D. of hæmolytic serum. The quantity of 3 per cent. cells used for each tube is 0·5 c.cm. plus 0·5 c.cm. of saline dilution of the hæmolytic serum, so that each tube actually receives 1 c.cm. of a 1·5 per cent. suspension of sensitised cells.

Complement.—Guinea-pig, killed the previous afternoon. The blood is placed in incubator at 37° C. for one hour to facilitate separation of serum from clot, then in ice-chest overnight. The serum is pipetted off next morning. A preliminary estimation of the M.H.D. of complement is made on the same day as the test, and at the same time the amount of complement fixed during two hours by the unit of antigen (0·3 c.cm.) used in the test, is estimated. For these estimations two rows of eight tubes are put up as shown in Table II.

TABLE II.

Front Row for Estimation of M.H.D. of Complement.

1/15 comp. ..	0·06	0·08	0·1	0·12	0·14	0·16	0·18	0·2
Saline	0·94	0·92	0·9	0·88	0·86	0·84	0·82	0·8

Back Row for Estimation of Amount of Complement Fixed by Unit of Antigen.

1/15 comp. ..	0·1	0·12	0·14	0·16	0·18	0·2	0·22	0·24
Antigen . ..	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3
Saline	0·6	0·58	0·56	0·54	0·52	0·5	0·48	0·46

The total volume in each tube is 1 c.cm.

Both sets of tubes are allowed to stand at room temperature for one hour and then put in the water-bath at 37° C. for another hour, at the end of which time 1 c.cm. of sensitised cells is added to each tube (making total volume to 2 c.cm.) and the tubes are shaken. The results are read after half an hour at 37° C. and 15 minutes at laboratory temperature. The tube in the front row, which shows *complete* hæmolysis with the smallest amount of complement, is noted. This amount of complement is the M.H.D.

The tube in the back row, which shows *complete* hæmolysis with the smallest amount of complement, is also noted. The difference between the amounts of complement contained in these two tubes is the amount of complement fixed by the antigen. For example, say the fifth tube of the front row (containing 0·14 c.cm. of 1/15 complement) and the sixth tube of the back row (containing 0·2 c.cm. of 1/15 complement) are the two tubes chosen, then the M.H.D. is 0·14 c.cm., and the amount of complement fixed by antigen is 0·2 − 0·14 = 0·06 c.cm.

Test.—Six tubes are used for each serum. These are placed along the length of the rack, leaving a space between the first two and the last four tubes. 0·2 c.cm. of inactivated serum is added to each tube. The first two tubes are for serum controls and the last four for the test proper. To the first control tube is added 1½ M.H.D.'s of complement. To the second control tube is added 1½ M.H.D.'s of complement plus the amount of complement fixed by antigen. To the first, second, third, and fourth tubes respectively of the test proper are added 1½, 2, 2½, and 3 M.H.D.'s of complement, plus the amount of complement fixed by antigen. These graduated amounts of complement are conveniently contained in a volume of 0·5 c.cm. The following is the method used for making up the required amount of complement plus saline in 0·5 c.cm. volume to each tube. This may be best given by an example. Let us presume that there are 44 sera to be tested and the M.H.D. of 1/15 complement is 0·14 while the amount of complement fixed by 0·3 c.cm. of antigen in 0·06. For practical purposes we should allow for 50 sera to be tested and provide for an excess of complement. In this example 3 c.cm. would be in excess.

After the complement has been added, pipette a further 0·3 c.cm. of saline into each of the two control tubes and 0·3 c.cm. of antigen into the four tubes of the test proper. Each tube then contains a volume of 1 c.cm. All the tubes are shaken and allowed to stand for one hour at room temperature and are then placed in the water-bath at 37° C. for another hour, at the end of which time, and while the racks are still remaining in the water-bath, 1 c.cm. of sensitised cells is added to each tube. The tubes are shaken and at the end of half an hour the racks of tubes are taken from the water-bath and allowed to stand at room temperature for 15 minutes, when the results are read.

TABLE III.

First Control Tube to Contain 1½ M.H.D. Complement.

1/15 comp. ..	0·21 c.cm.	×	50	= 10·5 c.cm.
Saline	0·29 c.cm.	×	50	= 14·5 c.cm.
				25·0 c.cm.

Mix in Jar 1 and pipette 0·5 c.cm. into all first control tubes.

Second Control Tube and First Tube of Test Proper to Contain 1½ M.H.D. plus Amount of Complement Fixed by Antigen.

1/15 comp. ..	0·21 c.cm.	+ 0·06 c.cm.		
	= 0·27 c.cm.	×	100	= 27·0 c.cm.
Saline	0·23 c.cm.	×	100	= 23·0 c.cm.
				50·0 c.cm.

Mix in Jar 2 and pipette 0·5 c.cm. into all second control tubes and first tubes of test proper.

Second Tube of Test Proper to Contain 2 M.H.D. plus Amount of Complement Fixed by Antigen.

1/15 comp. ..	0·28 c.cm.	+ 0·06 c.cm.		
	= 0·34 c.cm.	×	50	= 17·0 c.cm.
Saline	0·16 c.cm.	×	50	= 8·0 c.cm.
				25·0 c.cm.

Mix in Jar 3 and pipette 0·5 c.cm. into all second tubes of test proper.

Third Tube of Test Proper to Contain 2½ M.H.D. plus Amount of Complement Fixed by Antigen.

1/15 comp. ..	0·35 c.cm.	+ 0·06 c.cm.		
	= 0·41 c.cm.	×	50	= 20·5 c.cm.
Saline	0·09 c.cm.	×	50	= 4·5 c.cm.
				25·0 c.cm.

Mix in Jar 4 and pipette 0·5 c.cm. into all third tubes of test proper.

Fourth Tube of Test Proper to Contain 3 M.H.D. plus Amount of Complement Fixed by Antigen.

1/15 comp. ..	0·42 c.cm.	+ 0·06 c.cm.		
	= 0·48 c.cm.	×	50	= 24·0 c.cm.
Saline	0·02 c.cm.	×	50	= 1·0 c.cm.
				25·0 c.cm.

Mix in Jar 5 and pipette 0·5 c.cm. into all fourth tubes of test proper.

In the very rare instances when the M.H.D. of complement without antigen is above 0·14 the amount of saline dilution of the M.H.D. or M.H.D. of complement plus that fixed by the antigen is made in a volume of 0·75 c.cm., since this is not possible in 0·5 c.cm. exemplified above, and the final total amount in all tubes, including controls, becomes 2·25 c.cm.

The hæmolytic systems with and without antigen and a negative and positive serum are put up as controls at the time of each test. As the amount of complement fixed is found not to be related to the clinical state or to prognosis in the disease, further tubes appear unnecessary, and on practical lines are advantageously omitted. It may be recalled that serum plus antigen cannot be taken to fix the amount of complement fixed by each separately.

To give a general working rule we consider when tubes 1 and 2 of the control are completely hæmolysed or tube 1 completely or almost hæmolysed and tube 2 completely hæmolysed, then—

Fixation in tubes 1, 2, 3, and 4 of the test denotes a strong positive result.

Fixation in tubes 1, 2, and 3 of the test denotes a positive result.

Strong fixation in tubes 1 and fixation in tube 2 only denotes a weak positive result.

Weak fixation in tubes 1 and 2 only denotes a border-line result.

Fixation in tube 1 only denotes a negative result.

We beg to thank the Director-General Medical Services, Ministry of Pensions, for permission to publish this paper, and we wish to note the loyal assistance of our staffs, especially that of Mr. T. Harrison and Mr. Thompson in the carrying out of this work. During the course of our work we have done the T.C.-F.R. on 15 cases of renal tuberculosis, and in all the reaction was positive. The reaction carried out upon 30 surgical cases in hospital and showing no signs or symptoms of tuberculosis gave a negative result in all.

References.—1. Nimmo Smith: Critical Review of the Complement Fixation in Tuberculosis, Edinburgh Medical Journal, 1922, many references appended. 2. Ichok: L'Application de la Réaction Bordet-Gengou à la Tuberculose. Travail du Laboratoire de Prof. A. Besredka: Institut Pasteur à Paris (Revue de Médecine, 1922) (many references). 3. Willmore: Royal Society of Tropical Medicine and Hygiene.

INCENDIARISM IN ADULT MALES;

WITH SPECIAL REFERENCE TO THE SUBNORMAL AND MENTALLY DEFECTIVE PERSON.*

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AMONG offenders who undergo a routine mental examination before trial at remand prisons are those charged with arson, and the cases now under consideration were received at Brixton Prison during 1921, 1922, and 1923, at that time in the medical charge of Dr. W. Norwood East, to whom I am greatly indebted for advice and criticism.

Frequency and Incidence of Arson.

The total number of prisoners detained there during this period was 23,959, of whom 36 were accused of arson, representing a percentage of 0·15. The number of convictions for this offence throughout England and Wales at the same time amounted to 170, being 0·83 per cent. of all persons convicted on indictment. It should be pointed out that the total number of admissions to Brixton includes persons accused of indictable as well as non-indictable offences.

From 1900 to 1923, excluding war years, the average number of males convicted for arson amounted to 71 per annum, females representing only 4·6 per annum.[1] Fluctuation in this number has occurred from year to year, but, although alcoholic excess, which is reputed to have a marked effect on the incidence of the crime, was noted in many of the persons examined in the present series, it was found that the diminution in the number of cases of arson has not been commensurate with the very great reduction in the consumption of alcohol dating from 1900.[2] The act of arson renders the offender liable to the severest penalties. In one extremely rare class of case arson is punishable with death under statutes which are still unrepealed—viz., when it consists in setting fire to a king's ship or dockyard, or to any ship in the Port of London (Outlines of Criminal Law —Kenny). Penal servitude for life can be given in less serious cases, while shorter terms of penal servitude may be inflicted for attempts or threats. Although a sentence of penal servitude is given with comparative frequency in these cases, the length of the sentences, in common with those for other offences, has been considerably reduced in recent years. The incendiary, however, is a person for whom the public has little sympathy, and popular opinion as to his blameworthiness has shown perhaps less change than it has towards other offenders.

Incendiarism occurs at all ages, but in the present series it was found to be more common in the second, third, and fourth decades.

Motives for the Crime.

The motives of fire-raisers generally fall under one of the following heads: (1) Defrauding insurance companies either directly or indirectly; (2) hiding evidence of guilt—e.g., in cases of theft; (3) avoiding conviction and sentence to a military prison; (4) to obtain shelter in prison on account of unemployment or destitution; (5) revenge, hatred, anger, or fear; (6) mischief; (7) nostalgia.

In order to show in what respects fire-raising differed from other forms of wilful destruction of property, the cases were contrasted with a number of histories of persons charged with committing malicious damage. The most obvious difference was found to be that arson rarely followed the alleged cause with such rapidity as did malicious damage. In the majority of arson cases it is possible to elicit a plan of some sort, and, in consequence, it would be rare for arson to arise from a chance impulse which is not resisted, whereas in malicious damage this is not uncommon. The crime necessitates some preparation, however crude it may be. That recurrent impulses occur to set fire to property is not disputed, but in none of the cases examined could the action be described as impulsive, in the generally accepted meaning of the term, and a comprehensible reason for it could usually be obtained. Malicious damage occurs with greater frequency than arson, at any rate in urban districts.

Incendiarism and Mental Defect or Disease.

A series of 40 cases, taken from notes of persons remanded for mental examination after a charge of malicious damage, was examined, and it was found that 10 per cent. were mentally defective, 60 per cent. were insane, and 30 per cent. were normal. In the arson cases mental disease in some degree was frequently found to be present, 11 of the 36 Brixton cases being so affected, amounting to about 30 per cent. of the whole, while 9 were subnormal or certifiable as mentally deficient, representing 25 per cent. In a supplementary group of 8 cases, which were not included in the Brixton figures, 3 were regarded as insane and 3 as subnormal or defective.

In Baker's figures,[3] drawn from the admissions to Broadmoor between 1864 and 1886, where they had been sent, after conviction for arson, as criminal lunatics, about 35 per cent. were found to be congenital imbeciles, the remaining 65 per cent. being insane. It should be noted that arson arising in cases of mental disease or defect is more often a rural offence, and that the majority of admissions to Brixton are drawn from the London area. Mental inefficients form about 5 per cent. of the remand prison population, and it has been shown that 2½ per cent. of certifiable defectives are charged with arson.[4]

Sullivan observes[5] that 52·9 in every 100 persons convicted for stack-firing are defective, while in cases of arson of all kinds 16·7 per cent. only are so affected. The inclusion of subnormal persons, who cannot be dealt with under the Mental Deficiency Act, would doubtless increase these percentages. The number examined in the present series was, however, too small to justify the quoting of figures, but it was noted that while the insane offender more often set fire to buildings, the subnormal or defective was responsible for the majority of stack fires.

The preponderance of defectives over others in cases of stack-firing is, on the whole, characteristic of their level of intelligence. Their inability to achieve success in any but the simplest manner and their liability to suffer from feelings of inferiority help to determine their choice of expression. Arson, in common with other offences, may become habitual in these cases, Nos. 1 and 3 in the appended histories serving as illustrations of this fact. As a rule defectives show little or no regret for the loss to others of which they are the cause. Revenge is their most common motive, but they are often indifferent upon whom the loss falls. Their impulses would appear to undergo little if any modification until they reach perceptual levels, and the consequent limitation of their field of action would account for these features in their conduct. None of the defectives seen were below the feeble-minded class, the lowest mental age being about 7½ years.

The case of the moral imbecile differs from other types of defectives. Recorded cases indicate that whenever incendiarism has occurred among their delinquencies, and it is not at all infrequent, the crime has been committed with superfluous thoroughness. Whereas the feeble-minded person may be able to form some estimate of the criticism of his conduct by others, the moral imbecile is incapable of doing so. He is insensible to opinion as to the purposelessness of his offence or to its effect on his own welfare. His crime lacks adequate inducement. He is careless of incriminating himself, whereas the feeble-minded person may make such endeavours, as are within his power, to hide the evidence of his guilt. Unlike the latter, the moral imbecile shows no preference for any particular form of delinquency, characteristics of his criminal activities being their variety and the absence of any stereotyped habit.

* This paper is published with the consent of the Directors of Convict Prisons, but does not necessarily represent their opinions.

A morbid impulse to burn is not limited to any particular group of psychoses or to mental deficiency, and, for this reason, it seems probable that the impulse is of accidental origin. The presence of an alleged irresistible impulse to commit an incendiary act, unless accompanied by definite signs of mental disease or defect, cannot be held to relieve an accused person of his responsibility. The condition, moreover, is not recognised in English criminal courts.

The mental states of the offenders examined in the present series were as follows:—

Mental deficiency	5	Paranoid dementia	1
Subnormal	7	Dementia	1
Mental instability	4	Mental enfeeblement	2
Manic depressive	2	Normal	18
Chronic delusional insanity	1		
General paralysis	1	Total	44
Dementia præcox	2		

ILLUSTRATIVE CASES.

Subnormal and Mentally Defective Persons.

1. Subnormal; criminal intent; criminal habit; recurrent impulses to burn; inferiority complex.

T. H., aged 45, general labourer, convicted for setting fire to a haystack after four convictions for arson and 14 for malicious damage.

Family History.—A maternal aunt was in an asylum and his maternal grandfather was paralysed. A sister suffered from hysterical fits. There was no history of epilepsy or intemperance.

Personal History.—The prisoner was the second child in a family of five; when 6 months of age his house caught fire, but none of the family sustained any injury. He left school in Standard VI. and was in fairly regular employment as errand boy until 19 years old, since when he has worked intermittently as a general labourer. During the war he served for three years in Egypt, being employed chiefly in the cook-house, and after demobilisation in 1920 he did odd work until 15 months before the present offence. He was a teetotaller and he denied syphilis. He was unmarried. In 1921 he had an attack of acute rheumatism. There was no history of fits and he had never been in an asylum. As a boy he did not get on well at home and when, at the age of 10, he ran away he was told that he need not return. He was frequently in trouble for playing with fire. Soon after he ran away he became destitute, and he then began his career of incendiarism and wilful damage which has continued with short intervals up to the present time. He admitted that he broke windows in order to get into prison.

For 15 months before the present offence the prisoner lived on unemployment pay. He alleged that a fortnight before the arson he began to feel depressed and restless. He attributed this to being out of work. He stated that he then felt, as before, a desire to set light to a rick. Arson of buildings did not attract him as a house did not blaze so well! He was not in debt or in trouble of any kind. He walked out into the country and while crossing some fields he threw away his match-box in order to overcome his desire to burn, but he subsequently returned and found it. He then set fire to the rick and waited until he was arrested. He did not know the owner of the property. He admitted to a feeling of relief after he had committed the offence.

His previous convictions were all of the same character. On several occasions he had given himself up to the police and pleaded guilty at the trial. He described the present offence frankly and he added that in similar circumstances he would repeat it, well knowing the nature and quality of the act and that it was wrong. The prisoner asserted that when at work he was not subject to attacks of depression with the accompanying desire to do an incendiary act, and that he was contented in prison, where he was given very simple work, because the employment was regular. His general knowledge was poor. With intelligence tests he reached the level of 14 years. He was suggestible and of a low type physically and mentally, but he was even-tempered, well conducted, and persistent in application while in prison. A mitral bruit and signs of old pleurisy were found.

2. Feeble-minded; malingering loss of memory; indifference as to the effect of the crime on others; revenge.

J. E. S., aged 30, labourer; charged with setting fire to five ricks, and suspected of rick-firing in the same neighbourhood for two years before arrest. The family history was negative.

Personal History.—The prisoner left school in Standard I. and worked as a hay-binder until joining the army in 1914. He stated that while in France he had an injury to his head but that he was not in hospital or otherwise treated for it. On leaving the army he got work on a hand pump at 5s. a week. At the police station he admitted setting fire to the ricks, using oily rags, adding that he went mad at times and was not responsible for his actions. When examined he alleged that on one occasion he lost his memory for three days, and that at another time he found himself 13 miles from home without knowing how he got there. He recollected going to the rickyard on the present occasion and that he was smoking a pipe. He stated that he then fell down and dropped the pipe. When he came to himself 10 minutes later he found the ricks burning. The accused then went home. He added that one rick belonged to his father's employer, another was the property of his own master, and he could not remember about the remainder. He denied, however, that he had any grudge against the owners, but he complained that ex-Service men had not been fairly treated as work was not found for them.

He had no previous convictions, there was no history of intemperance, and he had never been in an asylum. He could not read or write. His mental age was about 7¼ years. His general knowledge was poor—he could not tell the time, and he was unable to give change or do simple arithmetical sums. There was no scar on the head. His physical condition was good, but the Wassermann test was doubtful.

In view of the conflicting accounts which he gave of the offence, the unconvincing description of the alleged attacks of loss of memory, and the fact that the rick-firing took place at several spots in the neighbourhood, and probably over a considerable period of time, the loss of memory was not regarded as genuine.

3. Subnormal; feeling of inferiority.

G. S., aged 37, labourer; charged with setting fire to two wheat stacks. There was nothing of note in the family history.

Personal History.—The prisoner was the illegitimate child of a domestic servant. He was brought up from the age of 3 months by a foster-mother. He left school in Standard V. and afterwards worked as a farm labourer. In 1908 he was sentenced to three years' penal servitude for setting fire to a rick, the offence, he stated, taking place while he was drunk. Five months after discharge he repeated the offence. He was out of work at the time and had been drinking. He was sentenced to four years' penal servitude. He served in the army for two years, and during that time he was thrice convicted for theft. Four months after leaving the army he was sentenced to four years' penal servitude for stealing money, and four months after the completion of his sentence he committed the present offence. During the interval between his discharge and re-arrest he was out of work and living with his sister. There was no history of syphilis, epilepsy, or insanity. He was unmarried. Although a heavy drinker, he denied that he was under the influence of drink at the time of the offence.

The crime with which he was charged took place during a journey into the country. At 3.30 A.M. he made his way across some fields and set light to the stacks, after which he walked several miles in order to give himself up to the police. He stated that he committed the offence in order to get into prison, where he was more contented than when outside, because he there associated with his equals. In prison he was quiet and well behaved. His general knowledge was fair and he had a mental age of about 10 years.

General Paralysis.

J. S., aged 50; charged with setting fire to a haystack. The family history was negative. This man was in regular employment at a high rate of wages until a year or so before the date of the offence. Employment then became more difficult to obtain, and the accused's earning capacity gradually declined. For several months before his arrest he had no work. He had never been in prison before. There was no history of fits or insanity. He denied having had syphilis. He was married and had three children, the youngest one being 10 weeks old. He denied sexual excesses. There was a history of recent whisky drinking. He had been suffering from pains in the head for two months before the offence. His account of the crime was confused, but it appeared that after watching a football match in a field near his house he threw a lighted match into some dry grass, and although he admitted that he saw the fire spread to the rick, he went home without troubling to put it out. He was arrested five minutes later. The prisoner had delusions of exaltation concerning his vocal powers. While under observation he was found to commit petty thefts in the ward, and he was seen to put urine in his food on two occasions. The Wassermann test was positive. Argyll Robertson pupils, exaggeration of the knee-jerks, and other confirmatory signs were present.

The act is an illustration of the utter disregard for consequences to himself or to others which is commonly seen in the delinquencies of general paralytics.

Paranoid Dementia.

S. R., aged 27, no occupation; charged with setting fire to an occupied dwelling-house and with attempting suicide by hanging. When arrested the accused said: "I did it to do the woman downstairs a turn. I then tried to hang myself, but the rope broke." There was no family history of alcoholism, epilepsy, or insanity.

The prisoner left school in Standard V. and remained at work until he joined the Army. In 1919 he returned home and, as his mother was dead and he could get no work, he looked after the house for his father and sister. When the dole was discontinued he became depressed and tried to drown himself in the river. Later on he became much upset as he thought that people were trying to turn him and his father out of their rooms because he heard them saying: "We can't get the rooms." He was also annoyed because the landlady instructed a builder to do some small repairs when he thought that she ought to have given the work to him. This was the cause of his spite against her. He also believed that she tried to poison him and that people wanted to turn him out because they thought he had immoral relations with his sister.

For two nights before the crime he had no sleep. While alone in the house he made two attempts to hang himself and another to poison himself with gas. He then scratched his neck with a razor. Finally he put candles in various parts of the room and set light to some heaps of paper and clothing on the floor. While under observation he complained that other prisoners were making signs referring to his sexual habits.

Dementia Præcox.

J. Z., aged 21; charged with arson of a haystack. The accused was born in England of alien parents who returned to live in their own country several years before the war. When 12 years of age he and his father were interned until 1918. On his release he returned home and spent his days sitting about and brooding. On account of his depression he was sent to North Africa for two years, but his health did not improve. He then went as shop assistant to his uncle in England, but after a few weeks he suddenly left the house with a small sum of his own money and wandered about the North of England for three months without informing his relatives of his whereabouts. Eventually he was found on the road in an exhausted state and was taken into hospital. He could give no reason for his behaviour. Although he was on very friendly terms with his uncle he again left the house a few days after his return and made his way to a suburb where the arson took place. The police found him sitting by the burning rick going through the motion of striking matches. When examined he admitted that he set fire to the rick because he had done something for which he thought he should be punished. In this he referred to masturbation. He was very depressed and he gave a history of having attempted suicide on four occasions since the age of 11. He denied having had any homosexual experiences either at the internment camp or since that time.

Chronic Delusional Insanity.

D. A. B., aged 46, shoemaker; charged with setting fire to an occupied dwelling-house. The accused came to England from the Continent in 1899 and for many years he was employed as an expert shoemaker. Nothing abnormal in his conduct was observed until after his return from serving in his country's army in 1919, when his wife noticed a change in him. Ten months before the arson his favourite daughter died, and about the same time he had an attack of influenza. As a result he became depressed and was unable to work. His wife stated that he barricaded his room and would allow no one to enter it except herself and her son, and the accused remained shut up for about a year. An attempt to certify him as insane was frustrated by the prisoner's refusal to open the door.

While living in this way he constructed a sort of cage from the framework of an iron washstand, some sacking, and rope, and he attached this by a stout wire to the foot of his bed. At the time of the fire he was seen standing up in the cage, which was hanging out of the window at the end of the wire. When examined he gave no adequate reason for the offence, but he said that in 1900, while working with a number of compatriots, a lady came to the shop and the accused believed that she conceived an infatuation for him because he had a "Church" name. He tried to get employment in her house, but, owing to jealousy, he was prevented from doing so. There was never any communication between him and the lady, but prisoner came to the conclusion that she was of royal birth. On account of the jealousy he believed that he and his family were marked out for destruction, and as a protection he shut himself up in his room and constructed the cage as a means of escape. There was no history of alcoholism or syphilis. At the trial the prisoner was found insane on arraignment.

(*References at foot of next column.*)

ON PYRIDINE-β-CARBONIC ACID DIETHYLAMIDE

AND ITS USE AS AN ANALEPTIC.

By EDWIN STANTON FAUST, A.B., PH.D., M.D.

THE older schools of medical practitioners knew and appreciated the clinical value of quite a number of drugs or therapeutic reagents collectively termed "analeptics." Modern pharmacology (perhaps as a result of exaggerated nihilistic tendencies in therapeutics) seems to be losing sight of this class of drugs, and the term analeptic seems to be disappearing from scientific medical literature. In the last edition of Cushny's "Text-book of Pharmacology and Therapeutics" (1924), for example, the time-honoured term analeptic does not even appear.

Analeptics.

Analeptics may be defined as pharmacological reagents, acting (directly or indirectly) primarily, and some of them apparently electively, upon certain regions or sections of the central nervous system and certain peripheral organs, so that their functions are stimulated. Modern pharmacology, it is true, has dispensed with many of these substances, and only a few remain in present-day pharmacopœias. Among these are to be mentioned certain purin derivatives (caffeine, theobromine), strychnine, and camphor. One might add that adrenalin and pituitary extracts, under certain conditions, might well be enumerated under this head, and still others could be named; atropine, for instance, so far as the respiratory centre is concerned. It is needless to mention the many disadvantages of atropine in view of its many concomitant actions. For practical purposes the first-mentioned substances—i.e., camphor, caffeine, and strychnine—are certainly the best known and most frequently used analeptics.

On comparing the relative and absolute practical value of these substances it becomes clear that no one fulfils the needs of the medical practitioner. Strychnine, as is well known, affects mainly the spinal cord, and to a much lesser degree the higher nervous centres. Again, the cumulative action of strychnine is liable to give rise to certain difficulties and inconveniences when, as is generally the case, its absorption is not paralleled by its excretion. Regarding the inefficiency of strychnine in pathological conditions of the circulatory apparatus, the reader is referred to Cushny (loc. cit., p. 285).

Camphor has quite as many if not more disadvantages than strychnine. First, it is practically insoluble in water, and the administration of oily or ethereal solutions has numerous inconveniences and disadvantages. Among these are such local effects and lesions as subcutaneous pseudo-tumours, as Nicod [1] has recently shown. But, besides, camphor very quickly undergoes chemical changes in the animal body, and the products thus formed by oxidation and union with sulphates or glycuronic acid are pharmacologically inert. The rapid decomposition of camphor after injection results in marked tolerance, so that frequently renewed injections become necessary. And finally, be it remarked, that accepting Cushny's version and views on the subject, the therapeutical value of camphor as a heart stimulant seems altogether questionable. Cushny says:

"The value of camphor in heart diseases is still far from being established. Solutions of camphor in oil have been

[1] Revue Médicale de la Suisse Romande, No. 1, 1924.

(*Continued from previous column.*)

Dr. H. T. P. Young: References.

1. Judicial Statistics.
2. Alcohol: Its Action on the Human Organism, 1923.
3. Baker: Dictionary of Psychological Medicine; Journal of Mental Science, 1889.
4. East: British Journal of Mental Psychology, 1923.
5. Sullivan: Crime and Insanity.

injected subcutaneously in these cases, but they cause pain and swelling at the point of injection and are valueless."

The methods of administering camphor, proposed by Leo and by Fischer, by intravenous injection in very dilute aqueous solution or oily solution, have not stood the practical test. Certainly these methods have not yet attained universal acceptance, and the risks incurred in their use are certainly not a *quantité négligeable*.

The disadvantages of the purin derivatives as analeptics are sufficiently well known, so that we need not enter upon a discussion of their pharmacological demerits here.

It therefore follows from the above considerations that every new addition to the number of available analeptics in the sense above defined must be reckoned a decided gain in therapeutics. It is for this reason that we have in the course of the last few years studied a number of organic compounds whose chemical constitution promised to further the materialisation of our wishes. We have investigated a large number of derivatives of camphor and have found that among the derivatives of camphoric acid there are such compounds to be found, whose pharmacological actions approximate very closely to those of camphor itself—e.g., camphoric acid diethylamino-ethyl-imide. At the same time our researches have led to the discovery that certain carboxylated pyridine derivatives, in spite of the absence of ring-substituting aliphatic radicles as are found in the case of the camphor molecule, do nevertheless show in animal experiments many actions closely allied to those produced by camphor itself. Among the bodies of this particular group we have found that pyridine-β-carbonic acid diethylamide has, in man and other warm-blooded animals, the desired camphor-like actions in the most pronounced degree. Before entering upon a discussion of the pharmacology of this substance, we will mention its principal physical and chemical properties.

Pyridine-β-Carbonic Acid Diethylamide.

Pyridine-β-carbonic acid diethylamide is a viscous, faintly coloured, almost inodorous liquid, which distils over at a temperature of 150° C. at a pressure of 2 mm. Hg. It is easily soluble in water in every proportion, also soluble in the usual organic solvents. The aqueous solution is tasteless.

Pharmacological Data.—1. *Action on Normal Animals.*—After injection of an aqueous solution (1 c.cm.) of 0·1 g. pyridine-β-carbonic acid diethylamide into an ear vein of a rabbit, one notes that the animal shows almost immediately decided signs of its stimulating effects. Most apparent and striking is the *increase in the respiratory rate.* The animal, previous to the injection quiet and dull and indifferent to its surroundings, soon appears excited, jumps and leaps about, rises up on his hind feet, and appears abnormally interested in its environment. At the same time it appears timorous. On touching the animal with a stick it is liable to become aggressive. Touching its nose or whiskers results in efforts at self-defence, unwarranted by and out of all proportion to the intensity of the mechanical insult offered. At the same time one notes decided signs of increased reflex irritability. In male animals the sexual instincts and functions seem abnormally stimulated and augmented. After a lapse of from 15 to 20 minutes the action reaches its climax; thereupon respiration slows down and becomes again approximately normal; the tremor previously noted disappears, and the general excitement abates.

If the doses injected are increased, then after 10 or 15 minutes convulsions come on. In the initial stage these appear first in the form of twitchings in the muscles of the jaws and facial muscles (trismus). At the same time, or very soon after, there is a marked bending backwards of the head (opisthotonos). Finally, general convulsions supervene and these clonic-tonic convulsions are very similar to those produced by camphor. Sometimes there are remissions, whereupon the convulsions may again set in. In such cases the animal may succumb in consequence of respiratory standstill. If the animal survives, there may follow another attack of convulsions, weaker than the last, and then recovery usually ensues.

In dogs similar phenomena are observed. Here also is noted an increase of respiratory rate and in some cases, as with rabbits, signs of decided cerebral excitement. As regards increase of reflex irritability and convulsant action, dogs appear more sensitive than rabbits.

In guinea-pigs, mice, and rats the action is qualitatively the same as in rabbits. We would call special attention to the fact that in frogs pyridine-β-carbonic acid diethylamide acts as a paralysant and herein shows a further pharmacological analogy with camphor.

Subcutaneous injections of pyridine-β-carbonic acid diethylamide result in exactly the same phenomena, which, however, naturally set in somewhat later.

We desire to emphasise that *stomachic introduction* of this substance readily and quickly causes exactly the same symptoms. This fact is of practical therapeutical interest and importance, inasmuch as it shows that resorption of pyridine-β-carbonic acid diethylamide from the intestinal tract is accomplished quickly; and that therefore this substance can be given for therapeutical purposes per os with exactly the same effects as when injected intravenously or hypodermically.

2. *Action of Pyridine-β-Carbonic Acid Diethylamide on Blood Pressure.*—Rabbit, body-weight 2·3 kg., curarised; artificial respiration. Average blood pressure before giving, 98 mm. Hg. Intravenous injection of 20 mg. pyridine-β-carbonic acid diethylamide caused rise of blood pressure from 98 to 130 mm. Hg.

3. *Blood Pressure and Respiration.*—Rabbit, urethane hypnosis. Initial blood pressure 85, rose to 120 mm. Hg after three injections of ¼ gr., ½ gr., and ¼ gr. each. Respiration before injection of pyridine-β-carbonic acid diethylamide, 30 per minute, after five minutes, 46 per minute.

In another experiment the blood pressure rose from 80 to 120 mm. Hg, and respiration increased from 40 to 58 per minute after two injections of ½ gr. and 3 gr. each. (Compare Fig. 1.)

4. *Action on the Frog's Heart.*—Pyridine-β-carbonic acid diethylamide causes *slowing of the pulse-rate* and *increase of pulse-volume.* It diminishes and finally overcomes the depressant action of alcohol, chloral hydrate and chloroform on the heart. (Compare Fig. 2.)

There is no digitalis-like action. The new drug is, however, compatible with injectible digitalis preparations and may therefore be injected simultaneously and in the same syringe with these, if thought desirable. I have been informed that remarkable results have been obtained by substituting pyridine-β-carbonic acid diethylamide for digitalis in the later stages of digitalis treatment. Atropine does not alter the character of the action of pyridine-β-carbonic acid diethylamide on the heart.

It is evident that the above action of pyridine-β-carbonic acid diethylamide on the heart must result in better filling of the arterial system.

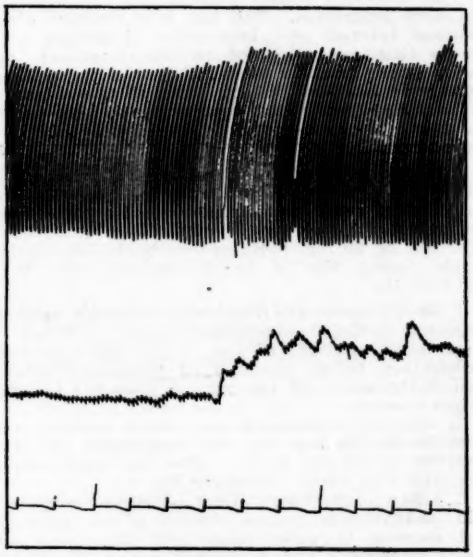
5. *Action of Pyridine-β-Carbonic Acid Diethylamide on the Respiratory Volume.*—I have been able to show by animal experiments that not only is the respiratory rate increased by pyridine-β-carbonic acid diethylamide, but that at the same time the respiratory volume is also increased. Illustrative of numerous experiments conducted on rabbits may be quoted the following:—

After injection of 50 mg. pyridine-β-carbonic acid diethylamide the respiratory volume rose from 350 to 440 c.cm.; and again, after further 50 mg. pyridine-β-carbonic acid diethylamide, to 490 c.cm. Thereupon the respiratory volume was reduced to 290 c.cm. by intravenous injection of 50 mg. morphine. Injection of 50 mg. pyridine-β-carbonic acid diethylamide raised the respiratory volume from 100 c.cm. (morphine action) to 300 c.cm.—i.e., approximately the normal respiratory volume (Fig. 3).

6. *Action on Blood-Vessels.*—(*a*) Using a Krawkow preparation of the isolated rabbit ear, it can easily be demonstrated that small doses of pyridine-β-carbonic acid diethylamide—for example, ½ c.cm. of a solution 1 : 1000 or ½ c.cm. of a solution 1 : 100 *contract the blood-vessels*, whereas larger doses—½ c.cm. of a solution 1 : 10—cause vaso-dilatation. (*b*) The same phenomena may be observed after intravenous injection of pyridine-β-carbonic acid diethylamide in a rabbit whose blood pressure was previously lowered to 40–70 mm. Hg by means of chloral hydrate. The blood pressure rises rapidly to 80 mm. and mounts steadily to almost normal pressure—i.e., approximately 95 to 100 mm. Hg.

7. *Action on Smooth Muscle.*—In this connexion it is of interest and important to note that smooth muscle is stimulated by pyridine-β-carbonic acid diethylamide as demonstrated in the following

FIG. 1.



Rabbit, body-weight 2·3 kg. Urethane hypnosis, intravenous injection of 0·05 g. pyridine-β-carbonic acid diethylamide.

Blood pressure ..	60 mm. Hg	66	—	100	—	
Respiration (rate)..	66	60	72	73	72	

experiment: Rabbit gut in Tyraude bath of 100 c.cm. Addition of 1 c.cm. pyridine-β-carbonic acid diethylamide solution 1 : 100 results in increased tonus and increased peristalic movements (Fig. 4).

Summary of Pharmacological Results.

From the above it is evident that—

1. Pyridine-β-carbonic acid diethylamide, being soluble in water in every proportion, is quickly resorbed from the stomach as well as after subcutaneous injection, and that its resorption results in camphor- and caffeine-like pharmacological actions.

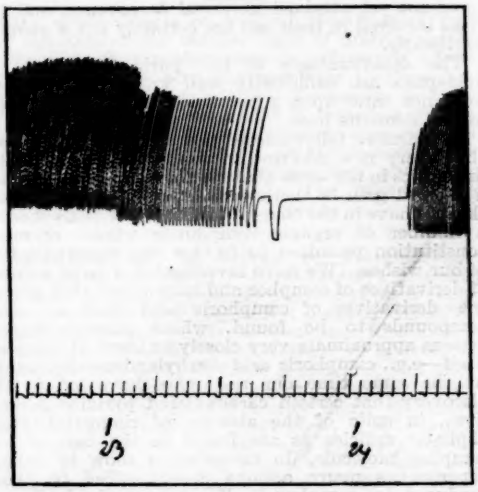
2. Pyridine-β-carbonic acid diethylamide causes stimulation and increase of the functions of automatic centres in the medulla oblongata (vasomotor and respiratory centres), and at the same time direct stimulation of the heart, resulting in—

3. *Rise of blood pressure* and *increase of respiratory movements;* at the same time *respiration volume is also increased.*

4. It is therefore evident that in all such cases, in which these functions have fallen below normal, as, for instance, in the case of collapse from any cause whatever, pyridine-β-carbonic acid diethylamide is, as a result and in consequence of its stimulating properties, able to combat, correct, or overcome such pathological conditions.

5. As compared with strychnine, it has the great advantage that its main action is exerted principally on the automatic centres in the medulla, while strychnine acts mainly on the spinal cord. Another advantage over strychnine is the fact that pyridine-β-carbonic acid diethylamide is *devoid of cumulative action.*

FIG. 2.

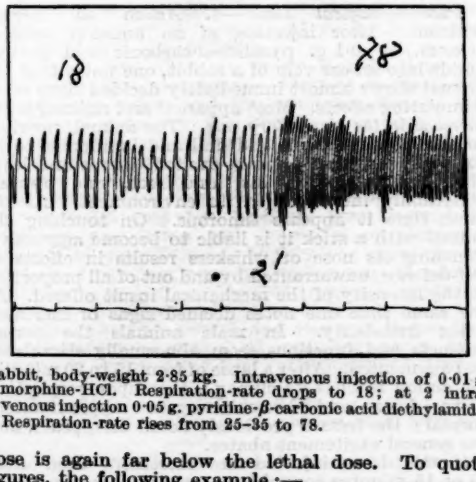


Frog's heart on Straub cannula, holding about 1 c.cm. At 23 normal; thereupon 1 c.cm. chloral-hydrate solution 1 : 5000. Heart stops at 24. 1 c.cm. pyridine-β-carbonic acid diethylamide 1 : 5000. The heart begins to beat again at once and soon attains normal pulse-rate and pulse-volume.

6. Note also the peripheral action on smooth muscle, resulting in vasoconstriction and thus causing further rise in blood pressure.

Pyridine-β-carbonic acid diethylamide shows a wide therapeutic range, that is to say, the *effective therapeutic dose* is far below the toxic dose, and the toxic dose is again far below the lethal dose. To quote figures, the following example:—

FIG. 3.



Rabbit, body-weight 2·85 kg. Intravenous injection of 0·01 g. morphine-HCl. Respiration-rate drops to 18; at 2 intravenous injection 0·05 g. pyridine-β-carbonic acid diethylamide. Respiration-rate rises from 25–35 to 78.

Effective intravenous dose for rabbits	..	..	0·005 g. to 0·01 g.
Toxic dose for rabbits	..	..	0·10 g. to 0·12 g.
Lethal dose for rabbits	..	..	0·20 g. to 0·30 g.

I therefore hold that pyridine-β-carbonic acid diethylamide bids fair to prove a valuable substitute not only for strychnine, but also for camphor and caffeine, inasmuch as its stimulating action is exerted

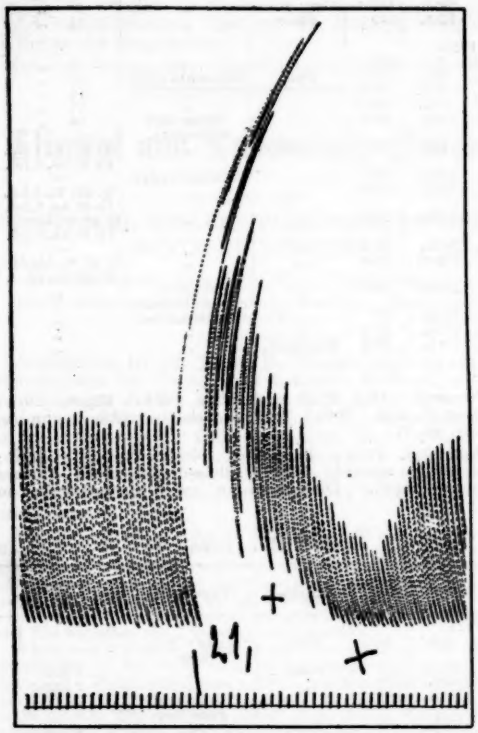
equally and simultaneously on the central nervous system and on the circulatory and respiratory apparatus. It is also evident that a substance endowed with pharmacological properties, as above described, should prove a valuable "tonic" in the general sense of the word.

Records of Clinical Use of the Remedy.

Pyridine-β-carbonic acid diethylamide (designated P.) has been used with success in the cases here given:—

CASE 1.—Woman, aged 50. Emphysema. Dilatation of right heart with arrhythmia and extreme cyanosis. P. was

FIG. 4.



Rabbit gut; Tyraude bath 100 c.cm. Addition of 0·01 g. pyridine-β-carbonic acid diethylamide causes increase of peristaltic movements and tonus.

given intravenously, beginning with 0·5 c.cm. and increasing up to 2 c.cm. Result: Rapid improvement of symptoms of cardiac insufficiency—cyanosis and dyspnœa. Was able to sleep at night. On discontinuing the treatment cyanosis and dyspnœa returned. Immediate improvement on further injections of P. No marked effect on blood pressure noted. The patient had 2 c.cm. P. twice daily for a fortnight without untoward symptoms, and improved so far as to be able to leave her bed and to show no further symptoms of cardiac insufficiency. While P. was used no other heart stimulant or tonic was given.

CASE 2.—Patient, aged 25. Heart failure (muscular insufficiency) with venous engorgement. P., 1 c.cm. twice daily, was given for a week. Marked improvement. Blood pressure unaltered. Patient requested continuance of treatment.

CASE 3.—Patient, aged 60. Cardiac insufficiency (muscular). Passive bronchitis. P. given, 2 c.cm. twice daily for several days. Marked improvement, subjective and objective after each injection, but good results were transient and patient died.

CASE 4.—Patient, aged 67. Cardiac insufficiency, the result of granular contracted kidney. Œdema very pronounced. Pulse-rate 120. Blood pressure (Riva Rocci) 180–110. Patient reacts well to digitalis, after which pulse-rate is reduced to 60. Blood pressure rises to 200/110. Sudden rise of temperature; hæmorrhagic lung infarct. Digitalis discontinued and P. given instead, intravenously, 1 c.cm. twice daily. Patient stands this change of treatment very well. No increase in pulse-rate, which remains at 70–80, while pulse full and strong. Later on digitalis given again with good results.

CASE 5.—Patient, aged 33. Broncho-pneumonia, measles. High temperatures during a fortnight. Bilateral pulmonary foci. Patient receives 1–2 c.cm. P. intravenously *pro die*, and does exceedingly well under this treatment. Blood pressure remains at 115–120. No signs or indications of heart failure whatever.

CASE 6.—Patient, aged 53. Coronary sclerosis, arterio-sclerotic affection of the myocardium. Severe dyspnœa even after only slight exertion. Feeling of oppression in the præcordia; of weight and constriction of chest. No œdema; no irregularity of the pulse. Pulse-rate between 80 and 90. Patient is given 1 c.cm. P. daily for a fortnight, with much apparent benefit. Result: Dyspnœa diminished. Patient feels well and more active. Pulse-rate unchanged but quality much improved.

CASE 7.—Patient, aged 85. Myocardial degeneration. Pulse accelerated, irregular. Intravenous injection of 1 c.cm. P. Result: Immediate improvement. Pulse becomes at once fuller, slower, and more regular. Continued injections of P. for a longer period of time result in decided and continued improvement.

CASE 8.—A. K., aged 35, brought in cyanosed and in a dying condition. Pulse quick and hardly perceptible. Intravenous injection of 1 c.cm. P. Heart action revived immediately. After a second injection further improvement, and finally normal circulation attained.

CASE 9.—Man, aged 50. Heart insufficiency (failure) following profuse pulmonary hæmorrhage. Intravenous injection of 1 c.cm. P. resulted in immediate improvement of collapsed condition. Pulse becomes stronger and fuller. Circulation equally improved.

PS.—Since this article was written favourable results on the use of P. in surgical cases have been reported from the surgical clinic of the University of Heidelberg (*Münchener Medizinische Wochnschrift*, No. 14, p. 562, 1925).

"SMALARINA" IN MALARIA.[1]

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AND
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THROUGH the kindness of Sir Ronald Ross our attention was drawn to some literature on the treatment of malaria by Prof. Cremonese's preparation of mercury sold under the name of "Smalarina." We therefore decided to give three patients suffering from malaria the opportunity of being treated with the drug.

"Smalarina" ($C_9H_{13}O_7N_4HgSb$) is put up in the form of small white tablets, and is administered before breakfast on an empty stomach. The course starts with a dose of one tablet, and successive doses are given on alternate days, increasing the amount by one tablet each time until the maximum dose of 16 tablets given on the thirty-second day completes the treatment. To give the treatment every chance, the patients were kept in bed throughout—two of them, indeed, were unfit to be up—but in spite of this the drug had no effect on the fever, nor did it abolish the parasites or change their appearance in any way. One patient had benign tertian, two malignant tertian.

CASE 1.—Male, aged 40. Returned from East Africa in November, 1924. Admitted to hospital, Dec. 8th, 1924. Had suffered off and on from malaria; present attack began six weeks prior to admission. Had been ineffectually treated with quinine.

Condition on Admission.—Ill and anæmic; vomiting; perspiring very freely; very weak; temp. 100·2° F. Spleen

[1] A paper read at the meeting of the Royal Society of Tropical Medicine and Hygiene on June 18th, 1925.

2½ inches below costal margin. Cardiac tone poor; otherwise systems normal.

Blood Examination.—R.B.C. 2,810,000. Hæmoglobin 50 per cent. W.R. negative. Malignant tertian rings present.

Progress.—One injection of quinine had to be given and this stopped the vomiting, causing the parasites to disappear and improving the general condition. This state was maintained until two days before the mercurial course was finished, when a relapse occurred. Vomiting restarted, parasites were again seen, and the spleen was still a full inch below costal margin. At the end of the course the usual quinine and arsenic treatment was given, with the usual spectacular result, the patient becoming convalescent in a few days. The splenic enlargement rapidly disappeared, parasites were no longer found, and the erythrocytes soon lost the polychromatophilic and basophilic degeneration, which was exceptionally well marked at the beginning. The details are tabulated for convenience in Table I.:—

TABLE I. (CASE 1.)

Date.	Temp. (°F.).	Condition.	Parasites.	Drug: Smalarina.
1924.				
Dec. 8th.	100·2	Poor.	M.T. rings (scanty).	—
„ 10th.	100	„	„	1 tab.
„ 12th.	99·4	„	No rings seen.	2 tabs.
„ 14th.	99·8	„	Nil.	3 „
„ 16th.	98·4	Fair.	„	4 „
„ 18th.	99	„	„	5 „
„ 20th.	98·2	„	„	6 „
„ 22nd.	98	„	„	7 „
„ 24th.	98·4	„	„	8 „
„ 26th.	97	„	„	9 „
„ 28th.	98	Improving.	„	10 „
„ 30th.	98·4	„	„	11 „
1925				
Jan. 1st.	98·6	„	„	12 „
„ 3rd.	98·8	„	„	13 „
„ 5th.	99	„	„	14 „
„ 7th.	100·2	Not so well.	M.T. rings (scanty).	15 „
„ 9th.	100	Poor.	„	16 „
„ 11th.	98·4	Fair.	„	Q. gr. x., t.i.d.
„ 13th.	98·2	„	Nil.	Q. gr. x., t.i.d.; Fe & As, t.i.d.
„ 15th.	98·6	„	„	—
„ 17th.	98·2	Good.	„	Q. gr.v., bis die.; Fe & As.
„ 19th.	98·2	„	„	„
„ 21st.	98·6	„	„	„
„ 23rd.	97·8	„	„	„

Remarks.—Dec. 10th, 1924: Intramuscular injection of quinine gr. v. 14th to 28th: Blood shows marked polychromatophilia, &c. 30th: Slightly improved.

Jan. 5th, 1925: Blood picture improved. 7th: Vomiting and drowsy. 9th: Injection of quinine gr. 7. 10th: Oral quinine, gr. 10 t.i.d. 21st: Allowed up. 23rd: Further progress rapid. Discharged in excellent condition on Feb. 3rd.

CASE 2.—Male, aged 23. Contracted fever in Karachi in October, 1924, and had been poorly off and on since; had taken occasional doses of quinine. Admitted to hospital Dec. 9th, 1924.

Condition on Admission.—General nutrition good, rather nervous, and tremor of tongue was noted. Chief complaint headaches. Temp. 98·4° F. Spleen just palpable, other systems normal.

Blood Examination.—R.B.C. 3,990,000. Hæmoglobin 75 per cent. W.R. negative. Malignant tertian rings and crescents present.

Progress.—General condition remained good for a fortnight, and then, despite the fact that the course of mercurial treatment was already well advanced, a sharp rigor occurred. This was followed by remittent pyrexia, until increasing headache, drowsiness, and vomiting necessitated the administration of one 5-grain dose of quinine. At the end of the "Smalarina" course the patient was worse clinically than on admission and much weaker; the spleen was still palpable, and parasites of perfectly normal appearance were plentiful. Quinine and arsenic treatment led to rapid convalescence. Details are given in Table II.

CASE 3.—Male, aged 20. Contracted fever in British Guiana, October, 1924. Attacks off and on since. Not taken quinine recently. Admitted to hospital Dec. 9th, 1924.

Condition on Admission.—Anæmic, otherwise in fair condition. Temp. 99·8° F. Spleen enlarged to percussion, not palpable. Systems normal.

Blood Examination.—R.B.C. 4,330,000. Hæmoglobin, 85 per cent. W.R. negative. Scanty benign tertian parasites present.

Progress.—Typical rigors on alternate days persisted for some time, and the spleen became palpable. Parasites which

TABLE II. (CASE 2.)

Date.	Temp. (°F.).	Condition.	Parasites.	Drug: Smalarina.
1924.				
Dec. 9th.	98·4	Fair.	M.T. rings and crescents.	—
„ 11th.	98·4	„	„	1 tab.
„ 13th.	98·6	„	„	2 tabs.
„ 15th.	98·6	„	Crescents only.	3 „
„ 17th.	98·6	„	„	4 „
„ 19th.	98·4	„	„	5 „
„ 21st.	99·2	Poor.	Rings and crescents.	6 „
„ 23rd.	98·8	„	„	7 „
„ 25th.	102·4	„	Rings numerous.	8 „
„ 27th.	100·2	„	Rings and crescents.	9 „
„ 29th.	103·4	Very poor.	„	10 „
„ 31st.	100	Poor	„	11 „
1925.				
Jan. 2nd.	100·4	„	„	12 „
„ 4th.	98·4	Fair.	Crescents only.	13 „
„ 6th.	98·8	„	„	14 „
„ 8th.	98·2	„	„	15 „
„ 10th.	98·6	„	Rings and crescents.	16 „
„ 12th.	99·4	Good.	„	Q. gr. x., t.i.d.; Fe & As, t.i.d.
„ 14th.	98·2	„	Crescents only.	—
„ 16th.	98·6	„	„	Q. gr. x., t.i.d.; Fe & As, t.i.d.
„ 18th.	98·6	„	„	Q. gr.v., bis die.; Fe & As, t.i.d.
„ 20th.	98·2	„	„	—
„ 22nd.	98·6	„	„	Q. gr. v., bis die.; Fe & As, t.i.d.
„ 24th.	97·8	„	Scanty crescents only.	„
„ 26th.	98	„	No parasites.	„
„ 27th.	98·2	„	„	„
„ 28th.	98·4	Excellent.	„	„

Remarks.—Dec. 22nd and 24th, 1924: Rigor. 29th: Not at all well. 30th: Intramuscular injection of quinine, bihyd. gr. v.

Jan. 6th, 1925: Improved. 10th: Course finished; oral quinine started. 22nd: Allowed up. 28th: Further progress rapid. Discharged in excellent condition on Feb. 2nd.

TABLE III. (CASE 3.)

Date.	Temp. (°F.).	Condition.	Parasites.	Drug: Smalarina.
1924.				
Dec. 9th.	98·2	Fair.	Scanty B.T. rings.	—
„ 11th.	101	Poor.	„	1 tab.
„ 13th.	101	„	„	2 tabs.
„ 15th.	101	„	Rings and gametes.	3 „
„ 17th.	98	Fair.	Nil.	4 „
„ 19th.	98·4	„	„	5 „
„ 21st.	98·4	„	Scanty rings.	6 „
„ 23rd.	98·4	„	„	7 „
„ 25th.	98	„	„	8 „
„ 27th.	98	„	„	9 „
„ 29th.	98	„	Rings and gametes.	10 „
„ 31st.	98·4	„	„	11 „
1925.				
Jan. 2nd.	98·8	„	„	12 „
„ 4th.	98·4	„	„	13 „
„ 6th.	98·8	Good.	Scanty rings.	14 „
„ 8th.	98·2	„	„	15 „
„ 10th.	98·6	„	„	16 „
„ 12th.	98·6	„	„	Q. gr. x., t.i.d.; Fe & As t.i.d.
„ 14th.	98·2	„	Nil.	„
„ 16th.	98·4	„	„	„
„ 18th.	98·2	„	„	Q. gr. v., bis die.; Fe & As t.i.d.
„ 20th.	98	„	„	„
„ 22nd.	98·2	„	„	„
„ 24th.	98	„	„	„
„ 26th.	98	„	„	„
„ 28th.	97·6	Excellent.	„	„

Remarks.—Dec. 13th, 15th, and 30th, 1924, and Jan. 3rd, 1925: Rigor.

Jan. 10th, 1925: Course finished. 16th: Feeling better. 20th: Allowed up. Discharged in excellent condition on Jan. 30th.

were sometimes numerous, persisted throughout the whole course of treatment without showing any degenerative change. Quinine and arsenic established a rapid convalescence after the Smalarina course was over. (Table III.)

It will thus be seen that:—

1. "Smalarina" was tried in one case of benign tertian and two cases of malignant tertian malaria.
2. In no case did the parasites alter or disappear for good until the usual quinine treatment was started.
3. In no case did the drug control the fever; *per contra*, this became so grave in two cases that quinine was required.
4. "Smalarina" appeared to have absolutely no effect of a beneficial nature.

We are greatly indebted to Dr. W. E. Cooke and Mr. F. W. Foster for their skilled assistance in the blood examinations; also to Sir Ronald Ross for giving us the drug to try.

Reference.—Monograph, "Malaria," by Prof. Guido Cremonese.

Clinical and Laboratory Notes.

A CASE OF FUNCTIONAL EPILEPTIFORM SEIZURE WITH BABINSKI REFLEX.

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ACCORDING to Dr. F. M. R. Walshe[1] and to other neurologists, the presence of a double Babinski reflex in a patient during a fit proves that the attack is epileptic. The history of the following case may be of some interest in this connexion, as it seems to indicate either that this reflex may be associated with a convulsion of psychogenic origin or that recurrent epileptic manifestations may have a psychogenic basis.

The patient, a woman of 24, had a fit during lunch. She had finished her meal and got up from the table, and when she had taken a few steps across the room she suddenly fell and was found to be completely unconscious. She was seen almost immediately by my colleague, Dr. A. G. Duncan, who made such neurological examination as was possible and has supplied the following observations.

When seen within a minute of the onset, patient was lying motionless on her back with flushed face and lips slightly cyanosed. Respiration was a little quickened and slightly stertorous, the jaw was not clenched, and there was frothing at the mouth. The eyes were closed, there was no resistance to separation of eyelids, and conjunctival reflexes were absent; the eyes were deviated to the left and slightly upwards, the pupils being widely dilated. The head was turned to the left but there was no tonic contraction of muscles of neck. The limbs were flaccid; knee-jerks were both very brisk. The plantar reflex was definitely extensor on each side, and on the right side movement of the toe was accompanied by slight flexion movement at hip and knee. Pulse-rate between 70 and 80.

Within four or five minutes the patient showed signs of returning consciousness by drawing up the right leg and opening her eyes. Full consciousness was regained rapidly, and presently she smiled, and in answer to a question said that she felt all right. She made no spontaneous remark and did not appear to be confused or at all disturbed by the fact that she had been unconscious.

History.—The patient had had previous fits. There was nothing abnormal in the physical condition; reflexes were quite normal. The first of these fits was associated with the breaking off of affectionate relationship with a friend with whom she had been living in rooms for two years, both of them doing work in the same office. Early in 1921 the friend became engaged and there followed for the patient a period of mental distress. In July it was arranged for the friend to go and spend a week-end with her fiancé's relatives. The patient was very miserable at being left alone, and her distress was increased by the fact that two nights previously she had spent an evening in the company of the engaged couple for the first time, and although she had been aware of the engagement for some time, she had not until that evening allowed herself to think of it as an actual fact. On the arranged day of parting the two friends started out to travel to town by train as usual. As soon as the patient entered the train she felt sick and hot, and at the first station the friend took her out on to the platform with the idea of taking her back to their rooms. The patient remembers quite well that she resisted the efforts of her friend, saying that she was too sick and ill to move and could not be left, and it was after 1 o'clock before she would leave the station. She was aware that by delaying long enough she might prevent her friend going for the week-end. The patient was left under the care of the landlady and the friend immediately left for her visit. The patient still remembers her intense mental agony at being left alone and also her conscious longing for complete forgetfulness. In the afternoon what was described by the landlady as a fit took place, and the patient was unconscious for several minutes. Several fits occurred that evening and during the following morning. Next day the patient was taken to a cottage hospital. She was there for a fortnight and had no attacks at all, but she says she slept nearly all the time and remembers little except her bitter annoyance with anyone who came and tried to talk to her or to wake her up to take food. She only longed to die. After leaving hospital she gave up work and went home, but still got daily letters from her friend. She had another attack two months later, associated with the fact that the anniversary of her birthday passed without any token of remembrance from her friend, whose letters also were beginning to become a little irregular. During the next two years, up till 1924, there were occasional attacks of no periodical occurrence, but always associated with some emotional stress connected with this friendship.

Treatment.—The patient came under my care six months before the present attack. The psychological meaning of the attacks was explained to her and she was urged to break off all correspondence with her friend, who had now been married for some time. This she did. At the same time all drugs were stopped. The patient had had bromide or luminal continuously during all these years. There was no recurrence of the attacks.

There was evidence that a fresh affectionate relationship had lately been established, which was just on the point of being broken off, as the patient was leaving for another part of the country, and the date of departure was just fixed on the day previous to the attack when the patient was seen by Dr. Duncan. The patient acknowledged that she had conceived the idea that she might prolong her stay at hospital by having an attack, and she was suffering at the time from acute mental pain and almost praying for unconsciousness.

The patient is an emotional girl of extremely affectionate nature, not given to outward display of feeling, and she could seldom find relief in tears. It is hard to think that this train of psychological events had no bearing on the onset of the attacks. If the presence of the extensor reflex in a patient who has just had a fit is to be considered as pathognomonic of true epilepsy, might it not be apt to be used by an observer as an excuse from the long tedious task of making a detailed psychological examination, which in this case has revealed so much material for consideration?

[1] THE LANCET, Jan. 10th, 1925, p. 65.

BRONCHO-MEDIASTINAL FISTULA IN POTT'S DISEASE.

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THE anatomical course that a vertebral abcess may follow is always interesting; but the actual evacuation of such an abscess through the respiratory tract is of sufficient rarity and interest to justify its recording. Additional interest is added to this case by the accident which led to the elucidation of the complete history.

J. P., aged 24 years, was admitted to East Fortune Sanatorium on Dec. 8th, 1924. No history of his previous health or of the condition for which he was admitted was sent with him. His own statements alone were available.

He was a hunchback, and stated that the deformity had been present from his earliest years. It had incommoded him, but had not made him an invalid. He completed a normal school course, and made his living as a clerk, working until the latter part of 1923, when, without any previous pain, a swelling appeared in the upper part of the right thigh. He was admitted to the Deaconess Hospital

in Edinburgh in February, 1924. The swelling was incised and pus evacuated. The wound had not healed. Such was the narrative given by him.

Examination.—A large diffuse kyphosis was present involving the whole of the dorsal area of the spine. The curvature was rigid, apparently of long duration, and free from tenderness and pain. In the upper part of the right thigh, at the base of Scarpa's triangle, and lying to the inner side of the track of the femoral vessels, there was a partly healed scar 1½ inches in length, with a sinus at its lower end discharging yellow pus in moderate quantity. It could be expressed from the region of the lesser trochanter, but pressure on the iliacus and psoas muscle areas did not produce any discharge. The signs suggested that the crural portion of a psoas track had persisted as a sinus. The institution X ray outfit had not been installed and examination by these means was not possible. The chest was grossly deformed. There was flattening of the percussion note over both upper lobes anteriorly, and a profusion of dry crepitant râles in the region of the left nipple. He had no cough and no spit.

Treatment.—It was decided to treat the apparently residual sinus with injections of Calot's paste, and on Jan. 23rd, 1925, 10 c.cm. were injected. The injection caused ballooning of the area which lay between the sinus opening and the lesser trochanter. Similar injections were repeated on Jan. 27th and 31st.

It was evident that the track had a greater capacity than 10 c.cm., and on Feb. 4th 20 c.cm. were injected. He experienced some abdominal discomfort during the injection of the second portion of 10 c.cm. and had an unpleasant feeling of something trickling under the lower ribs of the right side. These sensations were not mentioned by him at the time. Within a few seconds of the withdrawal of the syringe (urethral) he felt sick, became pallid, sweated profusely, and complained of a taste of iodoform in his mouth. A sensation of distressing tightness was experienced over the lower ribs of the right side. A few minutes later he began to cough up frothy white fluid, and about six minutes after the completion of the injection spat forth a yellow plug of the paste, to his great relief. With the onset of the first symptoms as much of the liquid paste as could be obtained was rapidly expressed from the sinus. During the remainder of that day, and during the day following, intermittent cough and expulsion of small plugs of the yellow paste continued. During Feb. 6th the cough subsided and the spit disappeared. No ill-effects persisted.

Specific questioning then elicited the information that before the operation in February, 1924, he had been coughing up huge quantities of pus, and that this ceased six weeks after the drainage of the abscess by the thigh.

It is difficult without radiographic examination to detect the actual diseased vertebræ, but the focus appears to have been in the mid-dorsal area of the spine. The delimitations of the various mediastinal compartments are more arbitrary than real, and the entrance of pus into the posterior mediastinum implies the possibility of spread to the superior, middle, or anterior spaces. A bronchus or the trachea had apparently been involved in the track of the abscess. A point of interest is that the comparatively small amount of 20 c.cm. of fluid injected into a sinus in the thigh should have exerted sufficient pressure to reopen this old fistula. Presumably the actual intra-abdominal psoas track was filiform.

CONGENITAL CYST OF THE COMMON BILE-DUCT.

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THE following case of a congenital cyst of the common bile-duct was recently admitted to the above hospital, under the care of Dr. G. F. Still, to whom I am indebted for permission to make these notes.

A girl, aged 6, had a history of intermittent jaundice and abdominal swelling for one year. In the first attack sickness, diarrhœa, and slight jaundice lasted two weeks. After a period of ten months, during which she was in good health, the jaundice reappeared. A third attack of jaundice, this time associated with abdominal pain, occurred two months later, for which she was admitted to hospital. In each attack the stools were clay-coloured.

On examination jaundice of moderate intensity was present, and the superficial veins of the chest and abdominal wall were unusually obvious. The abdomen was considerably distended, and the liver was found to be enlarged and hard, its free edge reaching down midway between the umbilicus and the xiphisternum. The spleen was not palpable. Continuous with the hepatic dullness and extending downwards to about two inches below the level of the umbilicus there was a large rounded mass, which in size and firmness of consistency varied slightly from time to time. A Van den Bergh test suggested an incomplete obstruction of the bile-passages. Wassermann reaction of the blood was negative. While under observation the degree of jaundice became less. The stools were not clay-coloured, and the urine contained no bile pigments.

Operation.—An exploratory operation, performed by Mr. L. E. Barrington-Ward, disclosed a large cyst lying in apposition to the hilum of the liver. Drainage was effected and about four ounces of dark-green viscid bile evacuated. The liver was observed to be of a dark purple colour, finely granular like morocco leather on the surface, and the gall-bladder was greatly distended with dark-green bile. A transverse section of a portion of the cyst wall, examined microscopically, showed it to be composed of dense fibrous tissue with an absence of mucous membrane lining it.

After a period, during which there was a continual drainage of clear yellow bile, an operation for choledocho-duodenostomy was done. The patient died suddenly about 48 hours afterwards.

At *autopsy* the liver, cyst, duodenum, and pancreas were removed in one piece. The cyst, which had shrunk considerably, had been anastomosed to the second part of the duodenum. Both the hepatic and cystic ducts were greatly thickened and somewhat longer than usual. The proximal pole of the cyst was at the point where these two ducts unite to form the common bile-duct. The gall-bladder was normal in size but its walls were thick and fibrous. The lower end of the common duct between the cystic dilatation and the duodenum could not be traced, but must presumably have been present considering the slight degree of jaundice during life. An interesting feature of the specimen was the unusually low attachment of the pancreas to the duodenum, so that the ampulla of Vater was considerably further from the pyloric ring than it is in the normal child. The liver was slightly enlarged, of a brownish colour, firm and finely granular superficially. Microscopically there was thickening of the portal tracts. The fibrosis was specially distinct around the smaller bile-ducts and also spread into the lobules compressing the peripheral ends of the columns of hepatic cells, thus giving the appearance of pseudo-bile-ducts. The bile-ducts themselves were not dilated. Dr. Scott Williamson kindly examined the specimen and found a small slit-like dimpled orifice in the cystic swelling, which was valvular and only patent on distending the sac. He could find no connexion between this orifice and the intestine, but discovered part of a blind ascending duct, about half an inch in length, attached to the duodenal end of the pancreatic duct, which might possibly be a portion of the common duct.

In 1923 J. Morley[1] collected from the literature records of 41 cases of congenital cysts of the common bile-duct, including two cases of his own. From a study of these cases it was found that the intramural or duodenal end of the common duct was not affected, and that in all cases where it was specially looked for the portion of the common duct below the cyst was patent. The opening of the common bile-duct into the cyst was usually found on its medial aspect. In this way as the cyst distends and bulges downwards the common duct would tend to become kinked and retention of bile would occur. Only in some of the recorded cases was the liver found to be enlarged and cirrhosed. In the case described here a cirrhosis of the liver was present, secondary to the obstruction of the common duct.

[1] Morley: Brit. Jour. Surg., 1922–23, x., 413.

LEWES VICTORIA HOSPITAL.—So successful had been the "Penny-a-Week" Fund organised in connexion with this institution that the governors reported at their annual meeting that the fund would enable additions and alterations to be carried out much earlier than they had expected. Among these was a new and up-to-date X ray room. By means of the fund no less a sum than £711 was received during the year 1924–25. It was announced that Mr. R. F. Jowers had presented an operating table to the hospital.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

Exhibition of Clinical Cases.

A MEETING of this Section was held on June 12th, Sir ARNOLD LAWSON, the President, occupying the chair.

Exudate in Retina.

Dr. RAYNER BATTEN showed a man, aged 64, with a massive exudate in the right retina and some exudative changes in the left. Three years ago he had an extensive vitreous hæmorrhage in the right eye and some retinal hæmorrhages and white patches in the macular area of the left. The blood pressure was reported as varying between 85 and 135 mm. Hg. There was no albuminuria or glycosuria, the central nervous system was normal, the Wassermann negative, and there were not present the cardio-vascular changes usual in retinal disease. The condition had been slowly increasing. He showed a drawing of a case of retinitis circinata, for comparison with the illustrations of this case which he projected on the screen.

Cerebral Tumour Compressing Optic Tracts.

Mr. LINDSAY REA related a fatal case of cerebral tumour which had compressed the optic tracts, chiasma, and nerves, The tumour was 40 mm. in diameter, yet the only symptom it produced was sudden blindness of the right eye. When Mr. Rea saw the patient there was the barest perception of light in that eye, but several who examined him failed to detect anything abnormal in the optic disc or in the calibre or appearance of the vessels. Neither did rhinoscopic and neurological examination give any results. A fortnight ago the speaker saw the beginnings of a papillœdema in the left disc. A skiagram revealed a flattened sella turcica. One of the sphenoidal sinuses had eroded through the bone, and two days later the man died of a spreading meningitis which had extended from the base over the brain substance. The patient had never shown any signs of nausea, and he was only giddy once momentarily. The right optic nerve had been pushed across to the left side, and the left optic nerve showed a slight papillœdema. The post-mortem examination and the drawing were made by Dr. Carnegie Dickson.

Dr. CARNEGIE DICKSON said he thought the tumour probably arose from the pituitary; the specimen had not yet been sectioned.—Dr. A. FEILING said that at the request of Mr. Rea he saw this patient early in January, and at that time he could find no reason for the loss of vision in the right eye. He presented none of the symptoms of an intracranial lesion, nor anything suggestive of endocrine disturbance. In fact, he raised the question whether the alleged loss of vision was genuine.—Mr. FRANK JULER asked whether there were pupil changes in the early stages of the case. Four or five months was a long interval before optic atrophy took place.—Mr. J. H. FISHER discussed the probable causation, expressing the view that there might have been no obvious or gross erosion of the sella turcica, but that there was an unusual anatomical arrangement of the cavernous sinus on the right side which enabled the growth to extend without much opposition. There was gross stretching of the right optic nerve, and this stretching had probably produced the early blindness, rather than a compression of those fibres between the tumour and any bony structure at the base of the skull.

Mr. REA replied that originally the optic nerves were in their proper anatomical relationship, but the sella turcica was eroded and flat. There was no disturbance of the visual field in the left eye, and there had been no approach to hemianopia in the good eye.

Pulsating Exophthalmos.—Epibulbar Sarcoma.

Mr. A. E. A. LOOSELY showed a patient with a pulsating exophthalmos. When he saw the case there was a history of six months' diplopia and weakness of the external and inferior recti. In each eye the vision was 6/6 with correction. When he saw the case a fortnight later the eye was protruded and the lids were so brawny that the eye could not be seen. There was a bruit, which could be heard by others as well as by the patient. The condition had developed in less than a week. Three days later a surgeon tied the external and internal carotids, with much benefit.

Mr. GEOFFREY VINER showed a woman, aged 31, who had complained of a black spot in the left eye, which had been increasing in size for nine months. He based his diagnosis of epibulbar sarcoma chiefly on the result of the slit-lamp examination. This showed that the pigmentation was extending not only on to the cornea, but also to the substantia propria.

Sir JOHN PARSONS considered the lesion was probably a pigmented nævus or mole of the conjunctiva. It was very unusual for these to become malignant. Still, there were several peculiarities in the case which required caution, and he suggested removal of the superficial layers of the cornea and microscopical examination of them before deciding on anything radical.—Mr. ERNEST CLARKE agreed with Sir John Parsons.

The Operative Treatment of Dacryocystitis.

Mr. G. H. POOLEY (Sheffield) read a paper on this subject. He said that in a large industrial area, like that of Sheffield, a large number of cases of dacryocystitis presented themselves for treatment, and as some came considerable distances and had household and other duties to attend to they could not be dealt with as out-patients. The condition was commoner in women than in men, in the proportion of about 4 to 1. The defects to be dealt with might be classified as follows: Stenosis of the puncta; stenosis of the canaliculi just before they joined the sac; obstruction in the sac itself without retention or regurgitation of inflammatory products; obstruction with retention of inflammatory products which, on digital pressure, passed down into the nose; and obstruction in which the inflammatory products passed, on pressure, up through the puncta into the conjunctival sac. In all these cases inflammation seemed to be confined to the interior of the sac. In a large and more serious group the tissues round the sac became acutely inflamed, and in many there was an abscess formation and death of bone. Many of these presented large red swellings. Sometimes these latter had burst externally before an ophthalmic surgeon saw the case. Obstruction of the sac without regurgitation could be kept quiet without operation. When the contents could be squeezed down into the nose all that was required was repeated digital pressure by the patient, combined with the use of antiseptic lotions. Distensions of the sac with regurgitations on pressure could be incised after injection with an antiseptic dye. A permanent drain inserted into the middle meatus of the nose prevented epiphora. Most trouble was caused by the suppurative cases. For some time he was content to incise and drain these cases, after which they were fomented. The results were fairly satisfactory, but in many patients abscesses subsequently formed, probably occasioned by dead bone. Next he tried incision of the inflamed sac, removal of the lacrymal ethmoidal cells, and scraping of the duct. This gave fairly good results, and many of the patients were free of epiphora: but some were troubled by it. There was no epiphora in the cases in which he had made a free opening into the nose. Then he commenced making an opening through the sac into the middle meatus of the nose, scraping out the sac and granulations, and leaving a ribbon of gauze in for three days. On the removal of that, two fishing-gut sutures which had been inserted at the time of the operation and left unfastened were tied, and the edges of the skin

brought together. This operation only took two or three minutes to perform, the results were satisfactory, and the convalescence was rapid. Fluid was syringed through the lower punctum into the nose on the seventh day, and on each subsequent day until the patient went home. He also described a further development of his technique, which had yielded excellent results, as there was no deformity and little or no epiphora. The ages of the patients on whom he had done these operations ranged from 18 months to 76 years. His series included two deaths —one from mycocarditis during recovery from the anæsthetic, and the other from a septic meningitis which had commenced before the operation was undertaken.

Mr. W. B. OLIVER suggested skin-grafting with the use of dentists' wax to take the place of catgut sutures.—Mr. FISHER said he thought epiphora must still exist after Mr. Pooley's operation; and Mr. Oliver's suggestion seemed unlikely to improve Mr. Pooley's operative procedure.—The PRESIDENT said he had not found that the epiphora was cured by removal of the sac. In most cases the suppuration and sepsis could be got rid of, but the epiphora remained.—Mr. E. D. DAVIS said that the chronic cases in which the canaliculus was slit up or an external operation done apart from excision of the sac had been a failure. There seemed a danger of the formation of a fistula from the nose to the face after Mr. Pooley's operation. He had seen two or three such results, the mucus coming on to the face.—Sir JOHN PARSONS pointed out that mucocele did not require the type of operation which Mr. Pooley had described. When the excretory channels had been obliterated one could not expect the patient to be free of occasional epiphora afterwards. In most cases in which West's operation had been done the opening rapidly closed up and the patient was no better off than before.—Mr. AFFLECK GREEVES said he would have thought that an opening into the nose was to be avoided; he had seen two cases in which after such an opening there was a general infection of the ethmoid cells, and the patient had a chronic fistula, which was only ended by a radical operation.

Safety Limits of the Jullundur Operation for Cataract Extraction.

Dr. G. MONTAGU HARSTON gave a short communication on what he considered to be the safety limits of the Jullundur operation for the intracapsular extraction of cataract. The crux of the matter was that the operation should not be done when the tension was high; even one millimetre extra pressure at the time the operation was done might mean disaster. A further point was that he was sure he could do the intracapsular operation far more easily with his fingers than by means of the Barraquer apparatus.

Sir JOHN PARSONS said he thought these intracapsular methods must necessarily be accompanied, in their present stage, by increased dangers to the patient's eye, and that they were not, therefore, fully justifiable.—The PRESIDENT also discussed the operation.

CARDIFF MEDICAL SOCIETY.

AT a recent meeting of this Society, Dr. E. E. BRIERLEY, the President, in the chair, Dr. D. LLEWELYN WILLIAMS, together with Dr. COLSTON WILLIAMS and Dr. RALPH PICKEN, opened a discussion on the

Provision of Hospital Accommodation.

Dr. Picken's remarks were confined to the question of hospital accommodation in Cardiff and East Glamorgan, and immediate steps which might be taken to relieve the existing pressure on the voluntary hospitals.

Voluntary Hospitals.—The population of this area, he said, was approximately 800,000, and voluntary hospital beds numbered about 850, or a little over 1 per 1000. These were distributed as follows: Cardiff 460 (Cardiff Royal Infirmary 341), other districts 390. Beds in near prospect at Cardiff Royal Infirmary 60–80. Beds in remote prospect at Prince of Wales's Hospital 100, elsewhere 240. Limit of prospective accommodation about 400 beds. The requirements as estimated by the hospitals themselves were: Cardiff Royal Infirmary (waiting-list 1800–2000) 216 beds, others vague. On a conservative standard of 2 beds per 1000, 750 beds were required for the whole area. If a higher standard of 3 per 1000 were adopted, the beds required would be 1550.

Poor-law Hospitals.—The total number of Poor-law beds in East Glamorgan was about 1100 (Cardiff 260, elsewhere 840). Many of these were permanently required for aged and infirm, and some of the institutions were not easily adaptable to modern scientific hospital methods. New beds in prospect numbered 650 (Cardiff 450, elsewhere 200), most of which would probably be excellent accommodation but ill-distributed to suit the areas whose needs were greatest. The projected accommodation in Cardiff requires to be reconsidered in relation to the future of the medical school.

Dr. Picken said that ambitious schemes were impracticable because of the enormous expenditure involved. The best use ought to be made of fever hospital accommodation (at present under-taxed) in populous areas—e.g., for acute pneumonia. Authorities responsible for tuberculosis should be encouraged and helped by the Government to provide adequate accommodation. Voluntary funds were not likely to be forthcoming in sufficient volume and voluntary hospitals were naturally reluctant to accept the control associated with rate- or State-aid. The most practicable measure appears to be the encouragement of the Poor-law authorities to develop their institutions to meet the needs of carefully defined areas. Subsidy from the Government and coördination through the Ministry of Health are probably required, involving legislation. If this policy were adopted an improved standard of staffing and medical equipment would be necessary. Health authorities, including county councils, should be encouraged to provide beds truly preventive in character—e.g., antenatal and maternity, infant wards, and open-air residential schools which ought to be available for teaching purposes and research. The analogy of the influence of sanitation on the beds needed for typhoid or of child welfare schemes on infant mortality suggests that such provision may materially affect the need for hospital accommodation for the next generation.

Dr. COLSTON WILLIAMS sketched briefly the history of hospital provision in this country. He illustrated the imperfections of local provision and its failure to keep pace with the rapid growth of population. He then traced the growth of the power of local authorities to provide bed accommodation for special diseases. He summarised some of the major defects of local provision revealed by the inquiry of the Voluntary Hospital Subcommittee in South Wales. The argument he then developed was that the medical profession should take every step in its power to assist the public in providing, not merely beds, but a fully equipped, coördinated, scientific service, and use it for the application of modern science in the prevention and cure of disease. He expressed doubt whether, in view of the present national conditions, voluntary hospital provision could adequately meet the needs of the future, and that the existing and future modifications of Poor-law hospital accommodation with improved service might materially help to solve the problem. In attempting a solution of the problem it was desirable, he said, to consider the great need of the middle class for obtaining skilled nursing, surgery, and expert opinion within their financial ability, and a middle way might be found in the hospital policy of the association, which was intended to remunerate hospital staffs for services which could not be equitably demanded from them except in the service of the poor. The general local needs which were imperfectly met in South Wales were beds for

medical cases, particularly for females and children, an increased number of special department beds for orthopædics, diseases of the eye, ear, nose, and throat. In conclusion of a general review on local provision, he showed that it was, as a whole, a striking example of confused, uncoördinated effort resulting in much waste of money and inefficiency of service. It was a duty of the medical profession to help at this juncture, and if they gave of their best to the community they need not fear in respect of their dignity, status, or remuneration.

Dr. LLEWELYN WILLIAMS said that the voluntary hospitals were hardly able to carry on in 1920 and 1921 and appealed to the Government to give them financial aid to help them out of their difficulties. A Government grant of £500,000 was made to these hospitals to prevent disaster. This money was distributed through local voluntary hospital committees. The distribution of this grant was completed by March 31st, 1924. The total grant for Wales was £22,098, and of this sum Glamorgan received £15,522. If we were all agreed that the voluntary system should be maintained, he asked what steps should be taken to provide these hospitals with an adequate income? Provision had already been made by the State and local authorities for persons suffering from diseases that were considered to be a danger to the community—infectious diseases, venereal diseases, and tuberculosis. Provision would also be made for crippled children up to the time they left school. Maternity hospitals also received considerable help. Nevertheless, the problem of funds was still, and always would be, formidable. An important factor, bearing on the possibility of continuing the voluntary system, was the very marked increase which has taken place in recent years in workpeople's contributions; further, there might be a possibility of extending the National Insurance Act to include hospital treatment. The alternative was assistance by central grant or local rates, with the necessary corollary of participation in administration. There was one defect in the voluntary system, he said—namely, the want of coöperation between existing hospitals; they were not part of a connected system. The smaller hospitals should be linked up with the big hospitals and used as casualty clearing stations, and possibly recovery beds. Until these hospitals were brought into some definite relationship with the big city hospitals, they were not used to the best advantage.

With regard to the relation between voluntary hospitals and Poor-law hospitals, speaking broadly, the voluntary hospital should deal with the acute case requiring specialised surgical or medical treatment, while the Poor-law hospital should deal primarily with the case in which the main need was skilled nursing and the kind of attention which cannot be given in the patient's own home. If we accept this principle, we should have to face the difficulty that a hospital could not concentrate entirely on the treatment of "chronics" without prejudicing the efficiency of the medical and nursing staffs. It was, however, essential that the voluntary and Poor-law hospitals should to some extent work together.

He was inclined to the view that the *local* hospitals should, as regards medical staff, be open to the medical men practising in that district, and should not be limited to a number of men, who are not necessarily the best men. There is a great deal to be said for admitting every doctor in the area who is prepared to take his share of the hospital work. At the same time, it would be a great advantage if physicians and surgeons of consultant rank from the large hospital were appointed as consultants to the local hospitals; further, it is the obvious duty of a hospital like the Cardiff Royal Infirmary that it should develop into a centre for post-graduate teaching and research work for the surrounding neighbourhood.

The following took part in the discussion: Dr. Bruce Low, Prof. A. W. Sheen, Dr. D. R. Paterson, Mr. H. G. Cook, Dr. Ivor J. Davies, Mr. T. E. Hammond, Dr. J. O'Flynn, and Dr. Melbourne Thomas.

Reviews and Notices of Books.

MANSON'S TROPICAL DISEASES.

A Manual of the Diseases of Warm Climates. Eighth edition, revised. Edited by PHILIP H. MANSON-BAHR, D.S.O., M.D., D.T.M. & H. Camb., F.R.C.P. Lond., Physician to the Hospital for Tropical Diseases, London, and the Albert Dock Hospital. London: Cassell and Company, Ltd. 1925. Pp. 895. 31*s.* 6*d.*

SINCE the last edition of this book in 1921 the medical profession and that section of it particularly dealing with tropical medicine has had to deplore the death of its original author, Sir Patrick Manson. The eighth edition, which now appears, has been drastically revised; much new material, both in the text and as illustrations, has been introduced without, however, adding to the size of the book, which is actually shorter by some 70 pages. The practitioner in the tropics has often to be a jack-of-all-trades. He must be a clinician with not only a knowledge of the special diseases occurring in tropical countries but also of those commoner in temperate climates. For example, when considering the diagnosis of a fever, as is pointed out in a very interesting chapter on this subject, he must keep in mind the possibility of pulmonary tuberculosis, as well as the various suppurative conditions, while the curious periodic fever met with in the Pel-Ebstein type of lymphadenoma may also add to his diagnostic difficulties. Moreover, the practitioner in the tropics is frequently his own pathologist; in Section B of the appendix some 40 pages of small print and many illustrations give as good and as practical an account of the chief laboratory methods he is likely to have to employ as many a text-book of much greater size. In tropical regions, again, the subject of medical zoology becomes of great importance and the bulk of the appendix is devoted to this subject. This section has been completely rewritten for this edition and contains many new illustrations. Here it is especially praiseworthy to produce a readable narrative, for the nomenclature, already almost terrifying by reason of the multiplicity of types and species, is rendered even more confusing by the number of synonyms in existence. Some trematodes, for example, have as many as seven or eight scientific names, only one of which can presumably be valid under the rules laid down by the various international congresses. An entirely new feature of the present volume is the inclusion of six maps, which show the geographical distribution of trypanosomiasis, leishmaniasis, yellow fever, schistosomiasis, and filariasis.

This is a very useful addition to what is well recognised as a most valuable standard text-book on tropical diseases.

PHYSIOLOGICAL METHODS.

Handbuch der Biologischen Arbeitsmethoden, herausgegeben Geh. Med. Rat. Prof. Dr. EMIL ABDERHALDEN. Berlin: Urban und Schwarzenberg. 1923–24–25.

IT is difficult to give an adequate account of a publication appearing, as this one, in a number of small parts, not always complete in themselves. We have received enough parts to be assured of the comprehensive nature of the work and of the laborious care which has been taken to ensure accuracy in detail as well as general perspective. It covers a wide range. For example, Lieferung 101 deals with every conceivable method of investigating the urine, and the matter is presented with laborious detail. Lief. 107 is concerned with the biological examination of certain food substances, honey, artificial sweetening agents, and sugar. In the 73 pages devoted to honey Dr. E. Spaeth records a striking amount of research into this substance; it would seem that honey might prove to be of great use in medicine if the knowledge contained in this

volume were more widely known. The section dealing with the saccharine group is very brief, but the final part, on sugars, is complete and well written. Lief. 108 gives a summary of the standard methods employed in Germany for the investigation of the physical standards of school-children. Lief. 109 contains an excellent account of histological techniques, given in great detail, with full references. Of especial value are the sections dealing with the histo-chemical methods for demonstrating inorganic tissue substances and for showing such bodies as mitochondria. Lief. 110 is the terminal part of the section on embryology, wherein Prof. Roux writes on the more mechanical methods of investigating development and Prof. Godlewski on special problems connected with fertilisation. A third small section on chemical problems by Prof. Parnas is too intensely specialised to make any general appeal. Lief. 114 provides an accurate and clear description of methods of estimating inorganic constituents of the blood, together with detailed considerations of the organic constituents and the formed elements. This part is marked by a breadth of outlook not found in some of the other sections; the best methods have been selected regardless of nationality, and the volume is thoroughly useful. Lief. 132 contains a full and lucid account of the theory of cystoscopy; the practical aspect is less satisfactory. Lief. 136 consists of the end of the section on fungi and a description of laboratory methods. The recent advances in this department are not included. Lief. 137 deals with diphtheritic skin reactions and is written by Dr. Schick and others. It shows an absence of criticism of the tests described and some lack of appreciation of work done in other countries. Lief. 139 forms part of the section on experimental psychology, and deals with the influence of environment. The handling of the subject, so far as this incomplete excerpt goes, seems clear and logical. Lief. 140 is concerned with histological methods; there are some notable omissions, such as the method of demonstrating pancreatic lesions in diabetics. Lief. 141 deals with the general methods of estimating energy balance and provides detailed accounts of methods of obtaining specimens from and of finding the basal metabolism in infants. The account of metabolic exchanges is somewhat complicated. Lief. 142 is occupied by a description of the methods of investigating the gas exchange of various animals and man. It is written by Dr. F. G. Benedict and is a fine piece of work, constituting one of the most up-to-date and detailed accounts of the subject which has appeared. Lief. 143 is concerned with joint function, developed into a highly mathematical science, and is an excellent example of the extent to which simple truths can be shrouded in unintelligible mathematical formulæ. The second part deals with graphic methods of studying movements. Lief. 152 consists mainly of a catalogue of apparatus used in investigating muscle sense and reciprocal innervation.

The "Biologischen Arbeitsmethoden" has been recognised in all countries as being an excellent system of physiological methods, and in its complete form should prove a most valuable addition to libraries of pathologists and physiologists.

MEDICAL GYNÆCOLOGY.

Fourth edition. By SAMUEL WYLLIS BANDLER, M.D., Professor of Gynæcology in the New York Post-Graduate Medical School and Hospital. London and Philadelphia: W. B. Saunders Company, Ltd. 1924. Thoroughly revised, with original illustrations. Pp. 930. 40*s*.

A COMPREHENSIVE revision has been carried out in this edition. Several chapters have been rewritten and the new matter inserted includes an excellent description of the technique employed by Rubin in testing the patency of the Fallopian tubes by trans-uterine insufflation. The section dealing with the therapeutic uses and methods of employing radium is also fresh and is well worth reading. Pronounced anæmia, impaired renal function, and abnormal retention of nitrogenous waste products are all considered contra-indications for its employment.

Under the title "Methods Employed in Medical Treatment," Dr. Bandler discusses a variety of therapeutic measures such as hydro-therapy, electro-therapy, and curettage. The latter procedure can hardly be classed as medical, and the disadvantages of any attempts to demarcate gynæcology into medical and surgical compartments are once more exemplified. This difficulty arises throughout the book, much space being devoted to discussing such pathological conditions as chorion-epithelioma, ectopic gestation and ovarian cysts, the treatment of which is obviously surgical. The indications given for the employment of electro-therapy are many and varied, but the most startling is in the treatment of dysmenorrhœa by use of intra-uterine electrodes—either galvanism or faradism being employed. No mention is made whether an anæsthetic is administered or not. As in previous editions of this work, a comprehensive and lucid account is given of the action of the endocrine glands and their close inter-relationship with the female genital tract and the autonomic nervous system. Diabetes and insulin treatment are now included in this portion of the book, and the probable relationship of the pancreas to hyper-thyroidism and Graves's disease is also discussed. Dr. Bandler himself has rewritten this section, which is up to date and represents an immense amount of labour and research into literature. The names of the various authors of recent work are freely quoted; unfortunately numbered references to the various contributions are omitted.

In view of the hypothetical nature of many of the views expressed and treatments recommended, this work cannot be considered a suitable text-book for the student or young practitioner, but for those of ripe experience with powers of discrimination we can cordially recommend it. The subject-matter is lucidly expressed, the printing is good, and the format is excellent. The book contains a wealth of therapeutic measures for the treatment of female diseases and also one of the clearest expositions of endocrinology as applied to gynæcology that we have seen.

PHYSICS.

Elementary Physics. For Medical, First Year University Science Students and General Use in Schools. By G. STEAD, M.A., Reader in Physics, Guy's Hospital Medical School. London: J. and A. Churchill. 1924. Pp. 453. 10*s*. 6*d*.

Dr. Stead has written a useful book on elementary physics, drawing upon his experience as a teacher of medical students. The book is singularly complete in its range of data; the illustrations are excellent, and most of the chapters are finished off with a list of those numerical examples which most medical students find so difficult to master. Samples of examination paper questions are included. The chapter on sound is particularly good, difficult points being carefully explained. In fact, the whole of the book is so clear that it should make a strong appeal to the medical student.

The Ideal Aim of Physical Science. By E. W. HOBSON, Sc.D., LL.D., F.R.S., Sadlerian Professor of Pure Mathematics. Cambridge University Press. 1925. Pp. 34. 2*s*.

THE author of this address advocates that physics should be looked upon as a descriptive science. Arguing with the precision habitual to mathematicians, he shows how the "explanatory" school simply shift the burden on to other shoulders, since the stage is inevitably reached when explanations fail. A teacher is on surer ground with descriptive ideals before him and the problems to be tackled are no less exacting. Prof. Hobson is really illuminating; a few pages from his pen on the relativity ideas of Einstein and Minkowski are worth volumes from those who have not grasped the essentials. We may quote a passage

to illustrate the incisive way in which he deals with crucial problems.

"Matter, as revealed by its gravitational phenomena, manifests itself solely as a system of singularities in the metric system. There is no place left for the notion of substance, either material or ethereal. It is sometimes said that space-time is crinkled or warped; this statement is liable to produce misunderstanding, at least when it is not properly qualified, and is in any case quite inappropriate. The fundamental manifold has no properties intrinsic to itself, except that of being ordered in accordance with an abstract conception of order. Hence it has no singularities which could be described as crinkles or warps. The singularities by which matter is manifested belong to the metric imposed upon the fundamental manifold from without, and are not intrinsic to the manifold itself."

This little brochure is a model exposition of constructive criticism.

Joule and the Study of Energy. By ALEX. WOOD, M.A., D.Sc., Fellow and Tutor of Emmanuel College and Lecturer in Experimental Physics in the University of Cambridge. London: G. Bell and Sons, Ltd. 1925. Pp. 88. 1*s.* 6*d.*

THE aim of the excellent series of "Classics of Scientific Method" is—

"to provide reproductions of the greater masterpieces of Science in convenient forms, together with a complete account of the action and reaction of ideas which, through the process of time, led up to the crucial experiments carried out and described by some great master."

Dr. Wood has well realised this aim, and Joule and the Study of Energy is an excellent selection for illustration. Dr. Wood takes the reader through the days spent by investigators in their search for perpetual motion, an idea so deeply ingrained that the failures of others only seemed to add zest to the pursuit. So much ingenuity but so little knowledge! Galileo's contribution to mechanical knowledge probably did more than anything to divert people from this vain quest. The bulk of this book is devoted to an account of Joule's life work. It is a fascinating record and brings before the reader the debt that science owes to a man of amazing accuracy. Finally, Dr. Wood gives a brief review of natural sources of energy in which he dwells for a moment upon the stories of atomic energy which await release.

QUANTITATIVE ANALYSIS.

The Theory of Quantitative Analysis and Its Practical Application. By HENRY BASSETT, D.Sc., Ph.D. London: George Routledge and Sons, Ltd. 1925. Pp. 308. 15*s.*

IN the past analytical methods have in the main been developed empirically, and it remains to be seen whether this state of affairs will alter in the future. In the preface to this book it is stated that in most cases, now that theoretical knowledge has advanced sufficiently, it is possible to interpret the operations of quantitative analysis in terms of the general chemical laws, and to develop new methods, if need be, by their help, instead of empirically. Dr. Bassett explains that no attempt has been made to write a complete treatise on quantitative analysis, a stop having been made at the consideration of the physico-chemical principles at the base of analytical operations. Accordingly he has included chapters on electro-affinity, coördination and solubility, and complex-ion formation. The book throughout bears the imprint of being written by an enthusiast, but perusal of its pages leaves us doubtful whether much is gained by the author's method of treatment. The average person making use of quantitative analysis for a definite purpose is more concerned with the exact conditions for effecting his purpose with accuracy than with the elaborate interpretation of these methods in terms of mass action, solubility products, and so forth. There may well be a public for the book, but it will not, we believe, be drawn from the ranks of those engaged in chemical analysis.

GYNÆCOLOGICAL NURSING.

Gynæcology for Nurses and Gynæcological Nursing. Fourth edition. By COMYNS BERKELEY, M.D., M.C. Cantab., F.R.C.P. Lond., Gynæcological and Obstetric Surgeon to the Middlesex Hospital. London: Scientific Press. Ltd. 1925. Pp. 364. 7*s.* 6*d.*

A COMPLETELY revised and enlarged fourth edition of this handbook for nurses has just been issued under the auspices of the Press Committee of the Middlesex Hospital. It has been written for nurses preparing for the State examination, and new matter is inserted so as to include the subjects dealt with in the part of the advisory syllabus issued by the General Nursing Council which relates to gynæcology.

The book admirably fulfils the requirements of the State examination in every way, and in addition contains a fund of practical information on gynæcological nursing which is not usually obtained even in text-books of a more pretentious character. Comprehensive directions are set forth in regard to the technique the nurse should employ in preparing for, or assisting at, an operation in hospital and private practice. We particularly like the useful illustrations with accompanying lists depicted in Chapter XXIII., where those instruments are enumerated which may be required for the various gynæcological operations.

The volume is well printed and illustrated, and should become a standard text-book for the nursing profession.

HEALTH AND PERSONALITY.

By JOHN S. GRIFFITHS, M.R.C.S., L.R.C.P., D.L. Library of Philosophy and Religion. London: Hodder and Stoughton. 1925. Pp. 320. 6*s.*

Dr. Griffiths has a sense of beauty and a firm hold on ultimate values; much of what he says is of value and some is original. But, as often happens with "popular" works, the lack of system in his presentation makes it difficult for the reader to keep his attention on the book. The five chapters form a series of short lectures on unrelated topics. The author dislikes modern psychology and agrees with a recent ex cathedra statement that "dreams have no psychological significance." Even those who are disinclined to accept this or certain other opinions will appreciate the general wholesome tone of the book.

RACIAL CHARACTERISTICS.

Rassenkunde des deutschen Volkes. Sixth edition. By Dr. HANS GÜNTHER. Munich: J. F. Lehmann. 1924. Pp. 504. 16*s.* 3*d.*

THAT this work has run through six editions in two years is sufficient proof of its popularity. It is, as its name denotes, a description of the characteristics of those races which constitute the population of Germany. The text has been rewritten and numerous excellent illustrations are added. The author, after a two years' residence in Scandinavia and Eastern Germany, has succeeded in further refining his previous classification of the races of Europe; he has now added a fifth race, the East Baltic, whose chief characteristics are: "Short stature, short head, broad face, flat nose, light eyes (slightly Mongolian), and fair hair." Dr. Günther claims, therefore, that he has discovered two fair European races—the Northern or Teutonic (tall, long-headed, and narrow face), and the North-Eastern or East Baltic, described above. It may be noted, however, that Deniker (Races of Man), in 1900, described six European races, two of which are fair-headed—the dolichocephalic, tall Northern race, and the sub-brachycephalic, short Eastern race. Dr. Günther's book is especially commendable for its 450 excellent portraits of types, and being written in simple German will appeal to the reader who has only a passing knowledge of that language.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

EVIDENCE OF OTHER MEDICAL BODIES.

(*Continued from p. 1316.*)

The National Medical Union.

(App. XLIX. and Q. 15745–15989.)

EVIDENCE was given by Dr. V. T. Greenyer and Dr. Charles Comber. The National Medical Union claims to represent that considerable portion of the profession which refused service under the National Health Insurance Acts, and has maintained its objections to the insurance scheme down to the present time. It considers that its attitude has been justified by the situation from time to time revealed in the working of the Acts. The membership of the National Medical Union at the present moment is 247.

It is the view of the National Medical Union that there should be a State medical service for necessitous persons, but that the insured person, as he exists under the National Health Insurance Acts, being in no sense a necessitous or destitute person, should insure voluntarily under one or other of the insurance societies under the supervision of the Registrar of Friendly Societies, which well served the purposes of medical benefit before the present National Health Insurance scheme became enacted.

With regard to the administration of medical benefit, the evidence suggests that :—

The medical and lay committees and mixed professional and lay assessorships of the National Health Insurance Acts, with above all the absolute and grotesque power placed in the hands of the Minister of Health, have degraded a liberal profession to the level of a supervised trade and deprived all accepting it of that responsible sense of self-respect once the essential feature of a free profession.

In support of the Union's statement that a circular letter which it had issued, containing a declaration of the essence of the Union's policy, had received the assent of a large section of the medical profession, the witnesses explained that the circular letter was sent only to London doctors as a test. It produced 1333 replies, of which 97 per cent. were favourable.

With regard to the restriction of medical treatment under the Insurance Acts by the exclusion of those services involving the application of special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess, the witnesses said :—

(Q. 15775.) We are not divided into classes, and we are not expected to have the type of knowledge which would suit this particular definition; so that when we approach a patient we approach him with all our knowledge, and it seems to us that when you attempt to limit by some definition of this character what shall be the range of treatment, you are giving us something to understand which we cannot intelligently apply to our system of education. I am speaking for the profession now.

It was contended that there was competition amongst panel doctors which was degrading and offensive. With regard to this, Dr. Comber said that at the commencement of the Act :—

(Q. 15791.) A lot of down-at-heel practitioners rushed on the panel before anybody else, and they are now doing pretty well.

He complained to the General Medical Council in one case and was told that there were too many cases of the sort for it to be possible to investigate. Later he agreed that the large majority of panel doctors were honourable men :—

But you must remember that at the commencement of the Act all the rubbish went on because there was nothing to stop them.

The Scottish Medical Guild.

(App. L. and Q. 15990–16092.)

Evidence was given by Prof. William Russell and Dr. Frederick Porter, who stated that their Guild represented about 700 non-panel men in Scotland. They agreed broadly with the views expressed by the Union, though they might have stated them in a different way.

(Q. 16065.) Do not you think a large number of the medical men in Glasgow who came under insurance service were as high in their principles as those in Edinburgh?—I will tell you this much, if they had the high principles they would not hold them very long under the National Health Insurance system.

Prof. Russell stated :—

(Q. 16090.) We are perfectly aware that there are many medical men on the panel who do their work most conscientiously and some men prefer that work to private practice, but our experience is (and I speak as a hospital physician as well as one coming in contact with all kinds of practitioners and people in Scotland) that a great deal of the work is eminently unsatisfactory and that there has unquestionably grown up, whether it is right or wrong that it should have grown up, a feeling amongst the people that one comes in contact with that a panel doctor will not give you as good treatment as a non-panel doctor will.

INDIVIDUAL EVIDENCE.

(App. LI. and Q. 16093–16193.) Dr. Harry Roberts (Stepney) gave first-hand evidence as a general practitioner in East London who, with three partners and an assistant, deals with a panel of nearly 10,000 insured persons. There is associated with his practice a dentist, a masseur, and two nurses. He said that patients in such a district as his have received since the passing of the Insurance Act a much improved service, consequent upon the improvement in the rate of payment up to the amount which was customary in prosperous working-class districts.

(App. LI., 5.) An entirely new situation was created in districts like mine. I at once realised that it would now be practicable—if the bulk of my private patients remained with me as insured patients—so to reorganise my work as not only to gain greater leisure for myself, but to provide an altogether fuller medical service for my patients.

Dr. Roberts said (Q. 16102) that insured persons nowadays see much more of their doctors than they used to do, and that although perhaps in his own practice the partners did more for insured persons than they were strictly under an obligation to do, he came across panel patients of other doctors and they were entirely satisfied with the medical arrangements. He found, however, a good deal of grumbling over the money benefits.

(App. LI., 7.) I have never heard an insured person speak of his approved society in a filial spirit. When he has any picture of it at all it is generally as a kind of blend of Scotland Yard and the board of guardians.

He found amongst insured persons generally a complete ignorance not only of the general principles of insurance and of the Health Insurance Act, but of the regulations of the societies, and consequently of the rights and benefits to which they are entitled, and of the penalties to which they are subject, and how those penalties may be avoided. They do not know when they are entitled to medical benefit—for many of them do not receive medical cards until

* In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7); Medical Certification and the Regional Medical Staff (March 7th, pp. 508–9); The Approved Societies and the Money Benefits (March 14th, pp. 564–5; March 21st, pp. 623–4); Evidence of the Hearts of Oak Society (March 28th, pp. 677–9); Evidence of the National Conference of Industrial Assurance Approved Societies and of the Manchester Unity Approved Society April 4th, pp. 731–3); Evidence of Independent Order of Rechabites, of Rational Association Friendly Society, and of Miners' Societies (April 11th, pp. 784–6; April 18th, p. 839); Evidence of Mr. Alban Gordon (April 18th, pp. 839–40); Evidence of Joint Committee of Approved Societies, of Stock Exchange and Lloyds' Health Insurance Societies, and of Group of Catholic Approved Societies (April 25th, pp. 889–91); Evidence of the National Insurance Beneficent Society (May 2nd, pp. 943–4); Evidence of the British Medical Association (May 9th, pp. 993–5); Evidence of the British Dental Association and other Dental Organisations (May 16th, pp. 1044–6); Evidence of the Insurance Committees (May 23rd, pp. 1097–8); Evidence of Various Approved Societies (May 30th, pp. 1135–6); Evidence of the British Medical Association (June 6th, pp. 1184–6; June 13th, pp. 1248–50; June 20th, pp. 1315–6); Evidence of other Medical Bodies (June 20th, p. 1316).

they make individual application for them—nor under what conditions they will cease to be entitled.

The witness criticised severely the form of record prescribed by the Ministry of Health, and said that although in his practice they kept a full-time secretary whose job it was to write up the official records, he and his partners never used them, but relied on a system of record cards which were kept in the custody of the patients themselves.

(Q. 16113.) Everyone of our 10,000 panel patients has one; often he has a bunch of 20 record cards pinned together, which he always brings with him, and in nearly every case carries with him wherever he is. . . . Whenever he comes to the surgery he produces it immediately, almost always without being asked for it. That includes a complete list of every attendance he has had since we knew him, and the opinions which any of us have ever formed as to his ailments, and all the prescriptions which have been given to him from the beginning, together with any opinion of a consultant to whom we have sent him which may have been given to us.

Dr. Roberts said that the principal limitations of the utility of the present medical service seemed to him to be:—

(1) The falling out of benefit of insured persons through unemployment; (2) the limitation of medical benefit to certain members of a family only . . .; (3) the limitation of provided medical treatment to such as is assumed to be within the range of an average general practitioner . . .; (4) the general neglect of insurance committees to make use of their powers to organise public education of the people in the laws and principles of health.

(App. LII.; Q. 16194–16345). Lieut.-Colonel W. Bickerton Edwards, who holds office under the Ministry of Pensions but gave evidence as a private individual, gave expression to his views as to the various ways in which the National Health Insurance scheme was defective on its medical side. Amongst other criticisms, he said that as the panel service was underpaid it induced medical men to take on more work than they could efficiently carry through. He suggested that a visiting list of 50–100 for the day over a scattered area, and 50–60 patients twice a day in the doctor's consulting rooms worked out in minutes spoke for itself. It was pointed out to the witness that on the basis of careful calculations submitted in evidence by the Ministry of Health his figures would correspond to a list of about 13,000 persons, whereas the maximum number allowed to any panel doctor was 2500, and 65 per cent. of all the panel doctors in the country have lists of less than 1200 insured persons.

Amongst the witness's proposals for an improved service, he suggested the division of the country into areas, each with an area hospital with a resident medical officer, nursing staff, and ambulance car, and each general practitioner connected with his hospital by telephone. He thought that a body of experts should report on the possibility of the pooling of the existing funds spent on the medical services of the country, and that compensation might be paid for the loss of the wage-earner by death, whether from accident or sickness, the premium at present paid for workmen's compensation being replaced by a sort of health tax. Upon it being pointed out to the witness that the Holman Gregory Committee had within the last three years examined this very proposal and reported against it, he said that he had not been aware of that fact.

(App. XXIII. and Q. 10061–10173.) Mr. Benjamin Broadbent, who, in connexion with health administration in Huddersfield has made the care of infant life his special interest, said in evidence that the cash maternity benefit under the Acts was a great opportunity unused and that its method of administration was a failure. He criticised the system of payment after the birth and the method of payment by insurance society agents in many cases who canvassed for the insurance of the child's life.

There is no means whatever for impressing on the mothers the fact that the maternity benefit money is given to her solely in virtue of her motherhood in trust for the child, and that it is morally a fraudulent use of the money to spend it on anything that does not help her to be a better mother and to rear her child healthily. It is even open to question whether the maternity benefit has had any appreciable effect in the reduction of infantile mortality, in other words, whether it has improved motherhood.

Mr. Broadbent considered that maternity benefit should be linked up with the maternity and child welfare schemes of local authorities and the money actually distributed by the health visitors, who could couple payment with valuable advice to the mother.

PORT OF LONDON SANITARY AUTHORITY.

THE NEW MOTOR LAUNCH.

BY W. M. WILLOUGHBY, M.D., D.P.H. CAMB.,
MEDICAL OFFICER OF HEALTH FOR THE PORT OF LONDON.

THE medical officers of the Port of London Sanitary Authority stationed at Gravesend for the purpose of preventing infectious disease entering the port on ships, as representing the medical officer of health, have somewhat plenary powers. The Port Sanitary Authorities (Infectious Diseases) Regulations, 1920, require and permit the medical officer of health to do all that is "reasonably necessary" for the prevention of the spread of infection from ship to shore. "Infection" is not defined. Seldom is any power so seemingly wide and undefined and touching such large interests conferred on one man. And yet on examination the words "reasonably necessary" imply the very best of limitations—namely, that all the medical officer does shall be "reasonable" and the thing done shall be "necessary."

Such powers and demands could only be given and made when the knowledge of cause and course of the ship-borne infectious diseases had reached a point which showed on the one hand that action taken must often be immediate, and on the other that action must be as varied as the agent of infection. These powers are the antithesis of hide-bound quarantine; they contrast cerebration and panic. Any long voyage traveller must have noticed the effects of the "blighty" sensation on passengers and crew approaching home and can imagine the result of any delay at the hand of man. Fog in the Channel, well and good, even days of it, but one hour's delay because a fellow man wishes to inquire as to the correctness of a list of addresses and for what purpose heaven knows . . .! The boarding medical officer can hardly explain to all the persons affected the intricacies of the problem he is solving when holding up a good-size village at the point of a fountain pen.

Plan to Combat Infection.

International conventions have arranged measures in connexion with cholera, plague, and yellow fever; as more especially ship-borne, typhus fever and small-pox are added to these diseases for the purposes of port sanitation, and as for other infections, there is an old saw to the effect that "if the kitten cannot get in at the same hole as the cat it can stop outside and mew." A cul-de-sac is therefore arranged for infection on the following plan.

An officer of H.M. Customs questions the master, or surgeon if one be carried, of every ship from a foreign port as to the health of the crew and passengers. The medical officer hears the answers to the questions "Are you all well on board?"; "Have you had any sickness or death during the voyage?" He examines every case of illness declared, and if it is "reasonably necessary" examines the remainder of the ship's complement. Such reasonable necessity is implied for every ship which has come from or touched at a port infected with any of the diseases mentioned above or which may be suspected of them or of rat-plague infection, whether any illness has or has not been declared.

As to the method of examination, the closer the contact of the medical officer with the personnel the more chance he has of covering the whole field comprised in the word infection. Should an officer not feel for buboes in examining for plague he would not find cloaked venereal buboes or be able to account for every bubo on the ship as it is part of his duty to

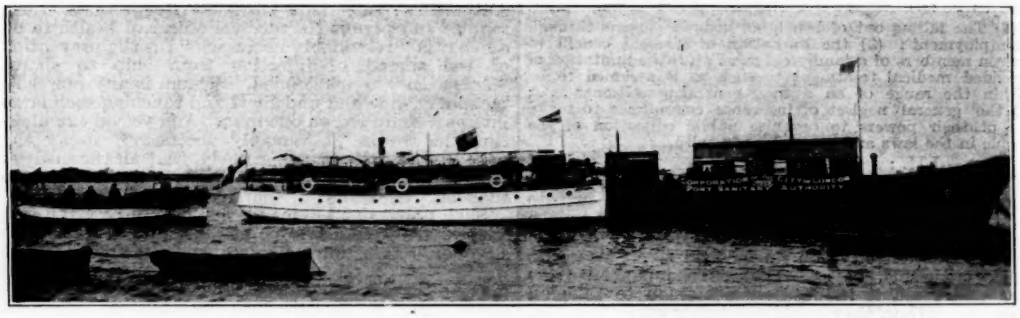
do, while to miss seeing the last man is to miss the one presumably incapable of the effort of mustering. The wrists and face of the examinee under scrutiny give their specific and general indications, as illustrated in small-pox and tuberculosis respectively, and a generally "seedy" expression requires a general examination, for which purpose the possessor is set aside from the muster.

Importance of Examination of Ships.

The satisfactory examination of a ship is obviously the most important and difficult individual operation in port sanitation. Those observers over tens of thousands of years from whom Moses and Solomon cribbed their saws and made useful generalisation had noted that time and tide wait for no man; lately Canute has acquired a spurious reputation from investigating one side of the postulate. Any boarding medical officer on the Thames could add an observation on the co-related impatience of shipping. A plague for disinfection implies launches and capacity. Such disinfection, as also the removal of patients and contacts to the hospital and the disinfection of ship's quarters, is under an inspector, who takes his directions from the boarding medical officer. The inspector is in charge of the launch, and one of his primary sanitary qualifications is that, having been a seaman and a master at one time in his career, he speaks with the officers of the vessel held up, of the bows and bulwarks not of sharp ends with railings, and can sling a patient on a stretcher from a davit with the best; that he knows where the buckets and mops are, or should be, stowed on the ship, and where are the likely rat-runs between holds and deck.

Disinfection on Shipboard.

Disinfection on shipboard includes such diverse organisms as men, rats, fleas, mosquitoes, lice, and bacteria. Efficacy, as usual, depends on the human element; effective application is as necessary as the



Port of London Sanitary Authority: New Motor Launch at the Mooring Station.

condition, once it is found, can be met *secundum artem*, but artfulness as well as acumen is perhaps the more exhibited in the rapid finding.

This examination goes on at the Thames mouth day and night throughout the whole year. A medical officer is always on duty, and no ship from "foreign" goes alongside a wharf or into dock without his visit. He has the privilege of seeing the summer sunrise and of climbing a vertical rope ladder when a rough sea makes companion-way inadvisable and a hasty ascent imperative. He has the tedium of "drawing blank" week after week, as also at intervals the satisfaction of a capture well worth the making and much to the advantage of the public.

It is curiously startling, even to the medical officer himself, how that—not lulled to sleep by a month of even or uneventful tenour—some seemingly casual but really well-directed glance at a face or log-book puts in motion a machinery which has its repercussion from Land's End to John o' Groat's. This apparent casualness in discovery is only the result of long acquaintance with the likely situation of both mare's nest and genuine brood and a rapid orderly method of search which, if satisfactory to the medical officer himself, is usually so to everybody concerned.

By the courtesy of H.M. Customs and an arrangement which has its mutual advantages, the boarding medical officer makes his visit on the Customs launch. His headquarters are on a hulk which externally may suggest to the economist that after all the cheapest thing which is efficient is best; internally it is a comfortable set-off to the chilly blasts of winter. This situation afloat and far away from town is well adapted to readiness for and success of the procedure of examination and disinfection. The hulk *Hygeia* also forms a mooring station and headquarters for two of the three launches of the Port Sanitary Authority, and is in telephonic communication with the inside world by submarine cable.

The turning out of the foc'sle quarters and their complement of, say, 100 in the case of small-pox or armamentarium. The close quarters on shipboard demand a thorough disinfection of both place and fomites as well as removal of the chief—i.e. (except in the case of plague), the human—reservoir of infection; all follows on that wide knowledge of ætiology of each of the diseases dealt with which is now available. The place and time for this work is in the river before the ship reaches dock; a clean sweep of the infection on board must at least be arranged before the ship proceeds to wharf or dock. Hence the uses of a launch fit to stand up to a wind-against-tide swell, with capacity for a bunch of natives and their bedding, clothing, and ditty boxes, and ready for action at any time of the day or night.

The new launch of the Authority, named after the present chairman, *Joseph White*, as also her smaller companion, the *James Howell*, fills the book. The name of Messrs. Husk, of Wivenhoe, the builders, is a guarantee for a strong and fitty build. The estuarine conditions and absence of shipworm at the *Hygeia* moorings admit of unsheathed wood instead of steel in the hull. The dimensions are: Beam 15 ft., length 74 ft., gross tonnage 62, draft 4 ft. 6 in. aft, moulded depth 8 ft. Her speed is ten knots with twin Thornycroft 50 h.p. engines, petrol or paraffin. In the absence of any necessity for boiler space comfortable seating capacity in the enlarged cabin space is provided for 40 and standing room for the whole crew of a 6000-ton ship.

When putting away the motor-car after a long day or taking her out at quick notice by night, the practitioner, whatever his love of horse, must be sensible of the time-saving over the necessary unharnessing and bedding-down associated with the horse and gig; much the same is the advantage of motor over steam-engines in this part of the work of the Port of London Sanitary Authority. In the latest launch the Authority has finally changed over from the sizzle of steam to the whirr of internal combustion engines. The work of the Authority is necessarily a somewhat silent one.

THE LANCET.

LONDON: SATURDAY, JUNE 27, 1925.

REFORM OF THE POOR-LAW: THE APPROACHING OPPORTUNITY.

IT is not, we hope, merely fantastic, in the twenty-fifth year of the century, to treat the question of health progress in quarter-century periods. The last quarter of the nineteenth century witnessed that remarkable advance in sanitary science and that tremendous development in environmental hygiene which owed its inspiration to the great reformers of the mid-Victorian era, and which followed upon the recommendations of the Royal Sanitary Commission in 1871. In the succeeding period of 25 years we have seen a quickening of the public conscience in regard to communal suffering and distress which has found its expression in legislative and administrative measures directed to the amelioration of the lot of the individual. Those hard-worked words "overlapping" and "coördination" have been doing good service in recent years and they have a long period of activity in front of them. It is, we suppose, common ground that in the health legislation of the two quarter-century periods to which we have referred there is no clear evidence of proceeding according to plan. Here some new function has been tacked on to the work of an existing authority; there a new authority created and set working on independent lines. Where provision has been made, as in the National Health Insurance Act of 1911, for coöperation with existing bodies, it has been largely a dead letter. And so, on the threshold of another 25-year period, stands Mr. NEVILLE CHAMBERLAIN facing a wonderful opportunity. With the impatience of those who will question the need for the elapse of so long a time before a proper development of the plans of public health are laid down definitely and who would like to put things right to-day, we have much sympathy. But to the discerning observer it is clear that over such a region as there is to travel rapidity of movement is impossible. This third period of 25 years, we venture to say, is to see the plans prepared for statesmanlike structure of public health administration, the foundations laid broad and deep, and maybe the building itself erected, equipped, and fully functioning.

In support of the long view in these matters we may reflect that it was so far away as 1871 that the Roy l Sanitary Commission recommended that there should be one local authority for all public health purposes in every place, so that no area should be without an authority or have more than one; it was in 1909 that the Poor-law Commission made those recommendations, to which successive Ministers have given their blessing, for the abolition of boards of guardians, whose functions were referred to by the Maclean Committee in 1917 as involving the largest and the most intractable case of overlapping with other authorities. Mr. NEVILLE CHAMBERLAIN has recently reaffirmed his intention of tackling the problem of the reform of the Poor-law. He would, we expect, be the first to disavow any suggestion that the health functions of the guardians are being inefficiently performed. It is generally recognised that a large and increasing number of our Poor-law infirmaries are in a position to place at the disposal of the poor and destitute members of the community professional care and equipment beyond the reach of a large majority of the members of the community. But the position is that beds in Poor-law infirmaries to the number of 100,000 are, to a large extent, not used to the best advantage or not used at all, while there is a deplorable shortage of beds in our voluntary hospitals. Sentimental objections to the word Poor-law, and recollections of what that word has formerly conveyed, should not blind us to these things. In clearing the ground for the development of a scheme of public health services under one local authority we have in the Poor-law an administering system, levying enormous public funds for the discharge of its functions, which arise from the existence of disease and distress, yet having no duties or powers in respect of their prevention. To say this is to say how much of the old order must be kept, but how much it needs before it can be kept usefully.

We do not detail any instances of overlapping of public medical services, for they are so well known. The Poor-law question in any case is the most serious proposition, and it may be assumed that, in his proposals for the coördination of various public health services which will be discussed with local authorities, including the boards of guardians themselves—and, we have no doubt, the representatives of the medical profession—Mr. NEVILLE CHAMBERLAIN will deal thoroughly and courageously with it. Since the Ministry of Health was created as the first step in the direction of placing all health services under one control, Ministers of Health have come and gone with rapidity. Mr. CHAMBERLAIN has before him, as far as one can foretell, a long period of office. He is, we believe, a man of untiring industry, and if he is approaching in a broad spirit the great and intricate problems, he will have accepted a splendid responsibility for developing a new era of public health administration. The problems, as we have said, do not lend themselves to rapidity of solution. Questions of valuation and of reconstruction of areas necessitate consultation with large groups of interests and with many types of experience, and perhaps the overthrow of groups and individuals who will die hard. The opportunity approaches for big work in a big cause.

THE PURSUIT OF PURE MILK.

MILK is the most important food available to mankind. Every medical practitioner is aware of its value, but his desire to see it more fully utilised is frustrated by his knowledge of the unsatisfactory conditions under which, only too frequently, it is placed upon the market. Few foods have received more consideration, and for few have more strenuous steps been made to obtain a better product. In a series of articles, completed in this issue, Dr. W. G. SAVAGE discusses the problem and why these efforts have not been more successful. One cardinal factor in the position is that the supply of milk is a matter of great importance to the agriculturist, and agricultural interests have often been exerted to frustrate efforts to provide efficient control. The greatest contamination of milk takes place at the cow-sheds which are mostly in rural areas, and the control over production is placed and retained in the hands of bodies composed almost entirely of farmers or persons directly in business relationship with farmers and milk producers. The control over meat is not left in

the hands of butchers and meat purveyors. The 1922 Milk Act added extensively to the control over purveyors of milk, but avoided touching milk production. It is well known that the powers of supervision over milk production are very inadequate, but it will come as a surprise to many medical men that it is not illegal for a milker with unwashed hands and dirty clothes to milk manure-plastered cows with dirty udders into an open pail in a dusty hay-laden shed, and for that bacteria-laden milk to be sent long distances without any attempts at cooling. Control is also very ineffective as regards the prevention of acute infectious disease spread by milk or the elimination of the danger of the transmission of bovine tuberculosis from cows suffering from that disease.

An important point stressed by Dr. SAVAGE is the close relationship between the quality of milk supplied and the demands of the consumer. At present the average producer obtains the same price for his milk, clean or dirty; why then should he go to the trouble and expense of providing a cleaner milk which is of no commercial value to him and which by law he is not compelled to provide? This fact suggests that one fundamental condition for obtaining a clean pure milk-supply is to create a demand for it on the part of the consumer. Clean pure milk must be made a business proposition, and Dr. SAVAGE indicates ways in which this can be done. Incidentally he points out that the medical profession is not pulling its full weight in this matter, both by failing to support actively milk producers and distributors who do supply clean milk, and by neglecting to use influence to see that hospitals and other institutions, in their contracts for milk, specify milk of high bacterial purity. An educated public opinion on this subject will make it much easier to ensure that supervision over milk production and distribution will be effective; the present control is farcical. The existing system of certain special grades of milk is admirable from this point of view as an educative influence, since their existence brings home to the consumer that milk is not a uniform article, one and indivisible, but is of very varying quality and purity. Apart from its educative effect, these grades touch but the fringe of the problem, and it is not very likely that they will extend to more than a small minority of producers. But the risk of the acquisition of tuberculosis from milk is a very real one; and a factor which is the cause of over 3000 deaths a year, on a very conservative estimate, and of a serious mass of preventable disease calls aloud for remedy. Dr. SAVAGE gives no short cut in regard to the difficult problem of the prevention of bovine tuberculosis, and does not discuss the subject in detail. Experience elsewhere shows, however, that it is possible to build up and maintain herds of non-tuberculous cows, while the elimination of cows actively disseminating the bacilli is a valuable auxiliary procedure. The development of orthopædic schemes for treating tuberculous and other cripples will probably give a considerable stimulus to the prevention of bovine tuberculosis, as it will become increasingly recognised that it is folly to spend huge sums on the treatment of tuberculous cripples without at the same time actively taking steps to prevent their manufacture.

We would direct attention to Dr. SAVAGE'S remarks on pasteurisation, since there is so much confused thinking on the subject. The basal fact is that at the present time the bulk of the milk consumed in the large towns is pasteurised by processes which are uncontrolled as regards the temperatures reached or the time the milk is held at a high temperature, and that such milk is sold as fresh milk. Some of it is pasteurised more than once. Reliable data are lacking to enable an opinion to be given as to whether such uncontrolled pasteurisation does or does not damage the nutritive qualities of the milk. It is a trade practice to enable initially dirty milk to survive as a commercial product. Such treatment is entirely different from controlled pasteurisation and distinct from the question whether the latter is in itself a valuable and satisfactory solution of the milk problem. In either case it is a substitution of heat treatment for clean production. A point of interest is as to whether conditions are improving. Dr. SAVAGE, from his unrivalled experience, considers that material improvements have taken place in the handling of milk after production, but that up to two or three years ago there was little evidence of betterment in the bacterial contamination at the cowsheds. During the last few years definite progress has been made, especially in regard to the sowing of the seeds of dissatisfaction with existing methods in the minds both of the producers and of the consumers, and in the better goodwill and understanding of the problem shown all round. The Milk and Dairies (Consolidation) Act, 1915, has never been put in force, but is due to come into operation on Sept. 1st next, and the Minister of Health has stated that its operation will not be further postponed.[1] Much of its value will depend upon the regulations made by the Ministry of Health under Section 1 of the Act, and these have to be framed with the concurrence of the Board of Agriculture. The Act has many defects, but, if efficient regulations are allowed to be made, it should improve markedly the legal control over milk production and distribution. For its efficient working it will need the support of all those who care for clean food. The medical profession believes in clean milk, and considers the consumption of it per head to be deplorably low. It will give its support to any reasonable measures to give us a pure clean milk-supply, and to remove what remains at present a serious blot upon the administration of public health in this country.

PROPHYLACTIC VACCINATION AGAINST TUBERCULOSIS.

VACCINATION against tuberculosis shows signs of revival in a new form. Since the early days of the tuberculin era vaccines in one form or another have never entirely failed to excite interest and experiment in one quarter or another, and it would probably be no exaggeration to say that more time and effort has been spent on the tuberculosis vaccine than on any other form of bacteriological research. Recent years have seen a further application of these researches in one particular direction—viz., the prophylactic vaccine. Old and new tuberculin have both been used in this way for many years, but the efforts put forth have been, on the whole, sporadic and the results equivocal. Shortly after the war popular excitement was aroused in Spain—it seems the fate of tuberculosis remedies to create unbalanced optimism—by the production of the Ferran vaccine. This vaccine was not derived from the tubercle bacillus itself, but from an organism of the *B. coli* group, from which it was claimed *B. tuberculosis* was descended. Dr. J. CHABÁS, in a recent number of the *Revista de Hygiene y de Tuberculosis* (Valencia) has revived this subject, whilst attention has also been called to it in South America.

[1] Under Section 14 of the Milk and Dairies (Amendment) Act, 1922, the Scottish Board of Health have just issued an Order, under which the Milk and Dairies (Scotland) Act, 1914, will also come into operation on Sept. 1st, 1925.

In all these writings the main plank in the anti-tuberculosis campaign is held to be the immunisation of the people—especially the infant population—with a specific prophylactic vaccine. Opinion naturally differs almost as widely as do the claims of the inventors as to the value of this or that vaccine. Doubtless the proposition is a fascinating one to all sociologists. The future is in the hands of the children, and if the world can be made safe for the coming generation by protection against such diseases as tuberculosis we have advanced one long stage on the road towards a happy future.

Wide publicity has been given during the past week to the announcement, made in another column by our Paris correspondent, that Dr. A. CALMETTE and six colleagues have reported to the Academy of Medicine in Paris the preliminary results of prophylactic vaccination against tuberculosis made in two series of cases of infants under one year of age. The basis of Dr. CALMETTE'S work is to be found in researches made by him, over a long period of years, on a culture-medium containing ox-gall, by the use of which non-virulent strains of bacilli capable of producing antibodies in laboratory animals have been obtained. The ape and the calf have also been found to resist infection with this strain. There are, of course, not a few of such strains in experimental use in various laboratories of different countries, and some of them, at least, on careful investigation have proved to be avian strains of the tubercle bacillus of very low virulence. (In passing we may note that a very interesting and illuminating article on these strains has recently been written by Dr. A. STANLEY GRIFFITH in the June number of *Tubercle*.) The Calmette vaccine is administered by the mouth in a spoonful of milk every 48 hours from the third to the tenth day after birth. The author states that this method is without danger and "its efficacy is beyond all doubt." Two series of cases have been published. The first is a series of 178 infants treated in 1922. A certain number of these cases appear not to have been traced, but it is stated that 94 are known to be quite well and that no deaths from tuberculosis are known to have occurred. The second series consists of 137 infants treated during 1924. These were all from families in which tuberculosis was known to have occurred. The mortality amongst Paris infants born in such an environment is stated to be 32 per cent. if left untreated, while in the series of 137 cases treated there have been, so far, no deaths. These statistics are remarkable and we await further details with much interest. Do the reports, for instance, state whether or not these last children were left in their tuberculous environment and whether this immunity can be attributed to any other precautions of the antituberculosis campaign, notably removal from the infected homes as is done in France under the famous Grancher system? We ask because a mortality of 32 per cent. among untreated children strikes us as remarkably high, and we do not know on what grounds this figure is suggested.

In conclusion, this experiment in prophylaxis against tuberculosis in infants raises questions which are of fundamental importance to our present views on the wholesale immunisation of a people. In all these large-scale experiments at least two essential desiderata are required. In the first place the bacteriological details of the vaccine must be firmly established, and in view of the doubts cast upon so many of these non-virulent strains of tubercle bacilli we must be quite sure that the strain is a human one. Dr. GRIFFITH'S work has shown that this point is by no means a purely theoretical one. Prophylactic vaccine with avian strains might well fail in its purpose. In the second place the sociological conditions for the experiment must be made non-variable as far as possible. Untreated and treated groups of infants must be under the same hygienic conditions, with the same welfare organisation details. Only by so stabilising the bacteriological and sociological conditions can any such experiments be really crucial. These difficulties have been emphasised at some length, as the question of prophylaxis against infective disease is notoriously hard to answer. We have only to follow the discussion which has been going on for some weeks in the *Times* on small-pox prophylaxis to realise how far we are yet from attaining a sociological crucial experiment free from all manner of variable factors.

PATHOLOGY AT CAMBRIDGE.

IN the class lists of the Natural Sciences Tripos issued in Cambridge on June 19th the names of four men and two women appear as having taken Part II. in pathology. It is no new thing that pathology should be theoretically, and occasionally in practice, available as a science subject as well as an item in the medical curriculum. But it is a departure full of significance of progress already made, and full of hope for more progress to come, that the subject should reach the position it deserves as a discipline worthy of independent study in one of our ancient universities, where it can be pursued along these lines to such exceptional advantage. The School of Physiology at Cambridge was an infant in the arms of Michael Foster not so many years ago; it has risen to a position which is nowhere surpassed and in few places rivalled, and in its academic devotion to the progress of knowledge has made contributions to practical medicine of the most real and solid kind. We hope that with its new position in the curriculum and its new buildings which are imminent, Prof. H. R. Dean will see the School of Pathology grow and progress to the same distinguished position; medicine is sometimes best served by those who do not go to the bedside.

WIRELESS INJURY TO HEALTH.

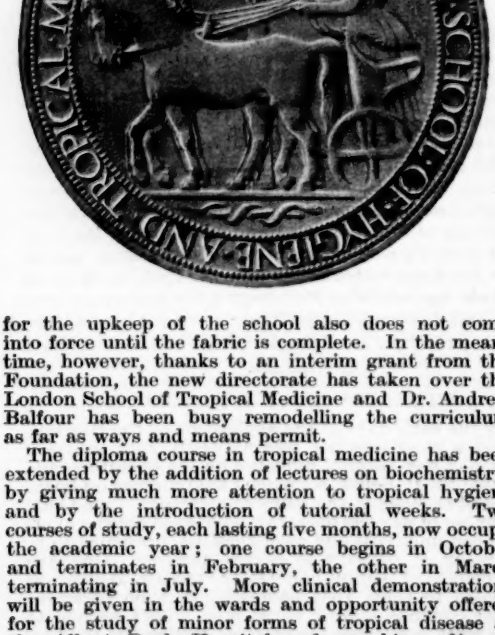
IN the early days of the application of the Hertzian waves a close look-out was naturally kept to see if they had any harmful influence on the operators, and in 1909 Dr. P. Bellile, a French naval surgeon on board a vessel engaged in the Morocco campaign, found that a number of wireless operators developed eczema along with conjunctivitis and even keratitis, presumed to be the result of exposure to electric currents. One man complained of painful palpitation, and Dr. Bellile was disposed to think that neurasthenia, then becoming rather common among naval men, might be due to their work in wireless telegraphy. During the 16 years which have since elapsed, in which every large ship and almost every up-to-date household has installed wireless transmitters or receivers, little or nothing further has been heard of injury to health. A recent tragic occurrence in which a wireless operator was electrocuted in the air was shown to have been due to a leakage of current from the magneto. The report just received from New Jersey of the death of six women in a wireless testing department from nervous collapse followed by fever and unconsciousness will not therefore be debited to the action of long wave currents until exact information is received. Happily it seems that the human body has no apparatus able to respond to very long electric waves.

Annotations.

"Ne quid nimis."

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

THE munificent Rockefeller gift of $2,000,000 does not come to full fruition until the London School of Hygiene and Tropical Medicine is both built and equipped. This will not be for another two years or so, although the decision will shortly be taken regarding the five excellent series of competitive plans submitted to the Advisory Committee. With characteristic generosity the Rockefeller Foundation, however, has guaranteed the sterling value of the gift as from the date when the offer was made. The undertaking of the British Treasury to provide funds



for the upkeep of the school also does not come into force until the fabric is complete. In the meantime, however, thanks to an interim grant from the Foundation, the new directorate has taken over the London School of Tropical Medicine and Dr. Andrew Balfour has been busy remodelling the curriculum as far as ways and means permit.

The diploma course in tropical medicine has been extended by the addition of lectures on biochemistry, by giving much more attention to tropical hygiene and by the introduction of tutorial weeks. Two courses of study, each lasting five months, now occupy the academic year; one course begins in October and terminates in February, the other in March terminating in July. More clinical demonstrations will be given in the wards and opportunity offered for the study of minor forms of tropical disease at the Albert Dock Hospital and on ships adjacent thereto. Research is to be put in the forefront of the programme and a number of studentships have been instituted, carrying an income of £250 per annum. Holders of these research studentships will give help as demonstrators in the diploma courses, but will have a large part of their time free for independent research. The demand at present for skilled workers in protozoology and entomology by Colonial Governments is greater than the supply. That these Governments are themselves awakening to the value of research was indicated in recent replies (summarised on p. 1381) by Mr. Amery in the House of Commons, although the proportion of expenditure on this head to the total cost of medical and sanitary services is as yet conspicuously small. The London School is now proposing to utilise overseas laboratories on a concerted basis rather than to continue the policy of research by expedition, as has been the practice in the past. Within the last few days a proposal has been made to develop the Natural History Museum at Nairobi into a centre for tropical research as a memorial to the late Sir Robert Coryndon, and a Rockefeller gift of £44,000 to the Singapore College of Medicine has been announced for the endowment of chairs of bacteriology and biochemistry. The aims of the London School are typified in its new seal, of which an impression is here given. The design, executed by Mr. Allan Wyon, owes its inspiration to a coin of ancient Sicily, where with little doubt the allusion is to the deliverance of the city of Selinus from a pestilence caused by the stagnation of the waters of the river. Apollo and Artemis are proceeding slowly in their chariot, Artemis driving while her brother, the sun-god, discharges arrows from his bow. The arrows are the healing rays of the sun, which drive away the malaria mists; and Artemis is beside him as the goddess who eases the pains of women labouring with child. The palm tree and the snake have been added to the Sicilian design.

The arrangements here described concern the teaching of tropical medicine for its special diploma, rather than the more general work on public health teaching which will be taken over by the school when completed. The requirements of public health students are being met in London at present at University College, King's College, Middlesex Hospital Medical School, and the Royal Institute of Public Health, with a special course on sanitary law and administration at St. Bartholomew's Hospital Medical School. It is proposed to develop the teaching of applied physics, physiology, and principles of hygiene, for which at present facilities simply do not exist, and public health students will also attend a course in parasitology to be given at 23, Endsleigh-gardens by Colonel A. Alcock, Prof. R. T. Leiper, and Dr. J. G. Thomson. At the same time opportunity will be taken of collecting a graphic museum of public health, something on the lines of the Ministry of Health exhibit now showing at Wembley, which will not be allowed to be disbanded when the Exhibition closes.

DETERMINATION OF SEX.

WE had occasion recently to point out [1] that the association of male and female with the right and left sides of the body respectively is a general belief in some form or other among all nations and peoples. Mrs. Monteith Erskine's book,[2] which we had not then received, confirms this statement. Mrs. Erskine now writes:—

"The theory which I have set forth and elaborated in my book 'Sex at Choice' is no untried recruit to the domain of biological hypothesis, but a hardy veteran who has stood the fire of 25 years' intensive practice and constant operation. It is in the workings of the left ovary as distinct from the right, and in the contention that both boys and girls may be conceived in the same month, leaving the alternate one completely fruitless, that the essence of my theory consists. For its substantiation I have utilised to the full the personal opportunities afforded by my own sex and maternity, probing to their depths the mysteries of pregnancy in its every phase. Furthermore, by sifting the researches of many medical and lay friends, by exhausting the contents of nearly every treatise of sex-determination from Hippocrates downward, by penetrating into the homes and confidence of women of every class of society, and finally by gathering from thousands of cases, where my formula was used, an accumulation of data undisturbed *by any vestige of contrary evidence*, I have secured the assurance necessary to lay my theory before the bar of public opinion. It is for time alone to pronounce judgment."

We have no desire to deny the possible truth of the views set forth by the late Dr. Rumley Dawson or of those now advanced by Mrs. Erskine. It is a priori likely that a belief so universal as that which

[1] THE LANCET, April 25th, p. 878.
[2] Sex at Choice. London: Christophers. Pp. 154. 7s. 6d.

connects the sexes with the sides of the body should have some sort of foundation. But that is quite a different thing from accepting such views as true. There is, so far as we know, no proof at all of the existence of the biological condition which seems to be assumed by both these writers. The different functions of the two sets of organs, on the other hand, constitute a conception which does not seem to fit in with such facts as the mixed nature of the sexes in the two uterine tubes in animals with large litters, or the presence only of one-sided organs normally in certain orders of animals. This last, by the way, may be associated in some way with the reversed idiochromosome arrangement to which Mrs. Erskine also refers in her letter. Chromosome observations, tentative as they now are, must be taken into account as future factors in deciding these questions. Their inherent difficulty has delayed progress, but if they materialise as they promise to do, they will form a body of positive facts that cannot be denied. Nevertheless, we must not lose sight of older experimental work, which showed that environment has some influence on sex-production in invertebrates and amphibians, and possibly a parallel may be admitted in the changing of sex after birth, which is known to occur even as high in the zoological scale as the birds. It may be objected quite properly that the human subject may have specialised in this matter on different lines, but it is clear that the chromosome factor and the environment influence do not necessarily stand as opposed hypotheses. At present it is enough to say that *if* and *when* the chromosome factor is established it will apparently be one with which all other views must be congruent. The clinical observations of Dr. Dawson and Mrs. Erskine may turn out to be approximately correct so far as conclusions drawn from them are concerned, and in the absence of crucial experiments they command attention; but they must give way to such evidence when it is forthcoming. We do not wish to lay any stress on the various anatomical and physiological crudities occurring in the book—these are only to be expected and do not affect the issue—but it must be pointed out that the one essential point is the demonstration of qualitative difference between the ovaries, and this is at present totally lacking.

SUNLIGHT AND CANCER.

EXPERIENCE has taught us that almost all our therapeutic agents are double-edged weapons and must be used with care and moderation if the evil that they do is not to live after them. The virtues of the solar rays in the prevention and cure of disease have been so loudly acclaimed of late that their rôle in its causation has received hardly any notice. In this country the question is not acute and in those regions where the sun has great power Nature has endowed the natives with protective dermal pigment, and the dangers of acute sunstroke are so vivid that the northern visitor takes elaborate precautions against exposure. It is only in the middle zone, where the rapid acute effects do not occur and the blonde, with his inadequate protection of freckles, works day by day in the sunlight, that we can expect to see the chronic lesions brought about by solar rays. Prof. W. Dubreuilh, of Bordeaux, in delivering the annual oration before the London Dermatological Society on June 17th, adduced much evidence to prove that the cumulative effect of prolonged exposure to the violet and ultra-violet rays in sunlight is responsible for those changes in the skin which are commonly, but erroneously, ascribed to senility. The only true senile change is loss of elasticity; the macular discoloration, the patches of small distended vessels, the white achromic macules, and the crusty or scaly areas are all pathological and constitute an ensemble described by Prof. Debreuilh in 1908 as "keratosis senilis." This term he would now make interchangeable with "keratosis solaris." The condition occurs only on parts exposed to the sun, and its connexion with exposure is well seen in the elderly peasant women who have worked in the fields all their lives, their heads protected by the conventional folded kerchief. Beneath the kerchief there is no "senile" change save wrinkling; the uncovered part of the forehead and ears, the face and the hands show all the characters of keratosis senilis. The condition is to be grouped with leuco-keratosis of the tongue, arsenical keratosis and Paget's disease of the nipple. It passes imperceptibly into that described by Prof. Debreuilh in 1896 as "precancerous keratosis," and epitheliomatous cells can be recognised histologically long before there is clinical evidence of epithelioma. The malignancy is no accidental supervention, but the final and inevitable stage of the process, if it be continued over a long period, even if the stimulus has ceased to be active some time previously. The distribution of epitheliomata supports the theory of solar origin. The terminal phalanges are very rarely affected, since these are wrapped round the hoe or other implement and so are not exposed. A striking contrast is seen in the X ray cancer, where these parts are as commonly affected as the rest of the hand. The dermoid is apt to occur at the inner canthus of the eye, the epithelioma scarcely ever, since that area is the part of the face most protected from direct sunlight. The preponderance of these epitheliomata of face and hands that come from country districts has been noticed by Bellini in Milan and by McCoy in America, as well as by Prof. Debreuilh in Southern France. McCoy has even noted that the condition is more common where there is a chalky soil, which reflects and enhances the effect of the direct ray, perhaps also increasing the relative proportion of the shorter rays. Southerners are rarely affected, Arabs and such dark-skinned races never, and the incidence falls far more heavily on the blonde than on the brunette. German observers have described a carcinoma of seamen, a phenomenon occupying a position intermediate between keratosis solaris and xeroderma pigmentosa. Here again the reflection of the rays from the surface of the sea is to be regarded as the reason for its limitation to seafarers. Prof. Debreuilh's observations of the rare xeroderma pigmentosa have led him to regard it as an acute form of keratosis solaris occurring in early childhood, as soon as exposure begins, owing to a peculiar sensitiveness of the individual skin. The length of the radiant wave seems to affect the nature of the lesion. The calorific rays produce instantaneous effects, with very rapid necrosis and much pain. Examples of their more chronic effects are the condition met with on the shins of those who sit much over fires during the winter, the epitheliomata of the shins of stokers, and the Kangri cancer, but these are late and rare developments. The X rays produce a slowly developing and slowly fading erythema. Numerous short exposures result in a cumulative effect similar to that of sunburn. The lesions of the violet and ultra-violet rays have a latent period of many hours and never show much necrosis. The grave results are only seen after years have passed. The latent period for the Rontgen rays is much longer—10 or 15 days—and the pain is less; the chronic effects appear sooner and are more serious.

COHNHEIM'S EXPERIMENT ON INFLAMMATION.

Two different views are held concerning the origin of the cells seen in the early stages of inflammation in the inflammatory exudate. Cohnheim taught that they are exclusively leucocytes which had emigrated from the blood-stream, a view which has been accepted, though not in its entirety, by the majority of pathologists. On the other hand, there are such distinguished authorities as Virchow, Stricker, and Grawitz who maintain that these cells are derived almost exclusively by proliferation from the connective-tissue elements and that emigration from the blood-vessels plays only an inconspicuous part. The problem has been the centre of a prolonged and extensive controversy during more than 50 years.

U. Westphal [1] has recently repeated Cohnheim's original inflammation experiment in order to obtain fresh evidence. By direct microscopic observation of the frog's mesentery he could follow all the stages of diapedesis of leucocytes from the blood-stream through the walls of the capillaries. This could be rendered particularly clear by a preliminary injection of neutral red. The leucocytes engulfed the red granules of the dye, and being thus coloured their paths could be followed readily. In another series of experiments the mesenteries were fixed after varying periods and the oxydase reaction applied to the various pieces. It is claimed that this reaction, in which indophenol-blue is formed owing to the presence of an oxydase in the cells, is almost specific for the polymorphonuclear and the eosinophile leucocytes, and is not given either by lymphocytes or the cells normally present in connective tissue. It was found that the normal mesentery shows only a few isolated cells in the capillaries giving this reaction, while the inflamed mesentery shows an accumulation of these leucocytes, stained a deep blue, at first within the capillaries and later as the inflammation proceeds in the connective tissue outside the blood-vessels. Westphal concludes therefore that in the early stages of inflammation—i.e., the first 24 hours—there is a massive emigration from the blood-stream of the polymorphonuclear leucocytes into the connective tissue and that these represent the bulk of the cells of the inflammatory exudate during that period. A very interesting result was obtained when a leucopenia had been produced by the injection of benzene. Blood films showed that though the leucocytes were greatly diminished they were not completely absent. But no leucocytes at all were seen in the inflammed mesentery of such animals even after 24 hours. This result indicates that diapedesis is not merely based on mechanical factors, such as pressure, but is a manifestation of the activity of the living leucocytes responding to stimuli such as chemotaxis. When the vital activities of the leucocytes are impaired, as they were in this experiment by the toxic action of benzol, this phenomenon of diapedesis fails to appear. The technique of the experiments is described in detail and the results are illustrated by instructive microphotographs. It would seem very suitable as a class experiment in a course of experimental pathology.

[1] Eine Nachprüfung des Cohnheim'schen Entzündungsversuchs, Frankfurter Zeitschr. f. Pathologie, xxx., 1.

A WELL-EQUIPPED PASSENGER SHIP.

THE *Crested Eagle* is a new ship of the General Steam Navigation Company which is to run daily, Fridays excepted, from London Bridge to Margate and Ramsgate, starting at 9.30 A.M. and arriving back about 8 P.M. Our representative, experienced in ships, who was invited to view her, came back frankly charmed. The *Crested Eagle* was built by White, of Cowes, paddle-wheeled, but with the flared-out bow of a destroyer to keep her forepart dry even when travelling at her usual 18½ knots. She is planned to carry 1791 passengers, all of one class, and is accordingly designed with everywhere large gangways, wide doors and staircases, and unusually unobstructed decks. She burns oil for steam-raising, so there are no ashes to make the decks gritty, and she is exceptionally well ventilated. The promenade deck, the highest, is one level plane from bow to stern, and on it are hundreds of seats, buoyant, life-saving, for passengers. The upper deck, on which one arrives, is less spacious, but its level is only interrupted by a very small rise over the paddle shaft. On this deck is the great pride of the owners, the restaurant, forward, lighted from the sides by windows, which can be shuttered in bad weather at sea, but, open as they will be in the river, they allow the 120 diners at thwartship (cross) tables, to get, every one of them, a view outboard of the river and its traffic, all the time of the meal, just the view obtained out of a Pullman car but unusual in a ship. There are half-a-dozen forced draught supplies from a trunk each side, and two 6-inch shafts amidships as exhausts. Below this is the grill-room for 40 guests (a silver grill in the galley—i.e., kitchen), with a fresh-air supply down the centre of each table and an exhaust forward. Aft on the upper deck is the main saloon, with heavy carpets and good upholstery, vacuum cleaned every morning; aft of this is the ladies' room, quite comfortable, with lavatory basins, and four well-ventilated, well-lighted, roomy w.c.'s. Off the midship end of this saloon there are, on the port side, a stair to the smoking-room and bar, and starboard, another stair to the tea-room, comfortably fitted and well ventilated. Amidships are the w.c.'s, urinals, and lavatories for passengers, white painted and well lighted throughout; quite satisfactory. The bars, kitchen, and pantries are all well lighted and well ventilated. It is pleasant to see so much consideration given to the comfort of the staff. A word must be said of the ventilation discharge outlets; they are round like oranges, and set in a spherical bearing, within which they move quite easily. Consequently, the air discharge, through what one might consider the polar circle of the orange, can be readily directed to the floor or the ceiling, or directly on to oneself if desired. With this outlet no ventilating current can be so easily prevented from becoming a nuisance. As the ship carries some 45 tons of drinking water, taken in from London daily, it has been possible to install a soda fountain, and all refreshments, solid and liquid, are kept well cooled, there being a large refrigerator on board by Halls, of Dartford. It may be mentioned that, above the promenade deck, is a large cylinder, a fire extinguisher, half containing acid, half an alkaline solution. In case of a fire these would be discharged upon it together, when it is expected that that fire would be at once smothered by the carbonic acid. Life-belts are carried under each saloon seat. The crew's fo'c'sle is aft of the collision bulkhead forward, and has 12 beds, with spring bottoms and mattresses, away from the ship's side; a rough eye measurement suggests there are 150 cubic feet for each man, and there are sprays, lavatories, and w.c.'s for sailors and stewards, just as good as for passengers. This is as it should be. The summer trips of this ship should be cool and pleasant.

GOING WEST.

ESCHATOLOGY is always a fascinating study and beliefs as to conditions after the death of the body are distributed throughout the world, but these beliefs are, from the limitations of our present mental powers, of necessity either hypothetical or inspired by faith. Those persons who are mentioned in the Scriptures as having returned from the dead have left no record of their experiences in the next world, and the descriptions of that world left us by the great classical writers, Homer and Virgil, by Cicero in the Somnium Scipionis, by Plato in the vision of Er as given in Book X. of The Republic, and in Dante's Divine Comedy are, so far as we know, flights of intellectual imagination. Nevertheless, belief in a future life is in some form or another a universal belief, and there exist such similarities between the beliefs of different nations and peoples as to make it probable that they are all variants of one primitive creed. Perhaps the most universal belief concerning the next world is that it is reached by a journey which includes the crossing of the sea or of a river by the soul. Miss Rosalind Moss [1] has no doubt that "in many places the belief in an afterworld across the sea is due to migration, the souls of deceased immigrants returning to a home of the dead in the land from which they came." This land, as a rule, lies in the west, because from that region the original

[1] The Life After Death in Oceania and the Malay Archipelago. By Rosalind Moss, B.Sc. Oxon. London: Oxford University Press; Humphrey Milford. 1925. Pp. 247. 14s.

inhabitants of Polynesia came. It seems to us, however, that the migration theory will not explain the universal folk-lore belief in Europe that the land of the dead lies to the west. The euphemism "go west" for "die" has passed into a proverb, among the Celto-Iberian peoples the land of the dead lies to the west, the Vikings laid their dead in a ship on a pyre which was fired and then the ship sent out to sea, the Fortunate Isles and the Isle of St. Brandan were all in the west and so were the Hesperides; the westernmost point of Brittany is full of traditions of a race whose profession was rowing the souls of the dead across the sea. According to Procopius, the land of the dead was Brittia—i.e., England, which, together with Ireland, was the westernmost portion of Europe. Finally, we have the traditional land of Atlantis. Now the migration theory does not explain these beliefs, unless the inhabitants of Europe originally came from Atlantis, and it seems to us more likely that the idea of the land of the dead being situated in the west arose from the sight of the daily apparent course of the sun.

Miss Moss tells us in her preface that the purpose of her present inquiry is to trace the connexion between burial customs and beliefs in a future life among the more primitive peoples of Polynesia, Melanesia, and Indonesia. She has collected an enormous amount of information as to burial beliefs in Polynesia and the journey of the soul after death, and everywhere we find the same ideas as are current in Europe. The ordeals and tests which the soul has to pass are much the same as those described in that curious folk ballad, "A Lyke-Wake Dirge," which mentions the bridge which must be crossed. Again, the dead do not depart at once for the spirit-world but linger for some days round the body. This belief is not extinct even now in Europe; not many years ago a medical man told us that a patient of his had left a request that his body should be cremated. The mother of the dead man absolutely refused her consent. When asked why, she said that if the body was burned the soul of the dead would at once depart and not linger round the grave. The persons concerned were of high intellectual capacity. Miss Moss's book is well worth reading, her material is well put together, and she does not dogmatise; but all the beliefs which she has collected go to show that humanity has preserved a deep-lying stratum of creed which must have come down from the long ago when the human race was one people.

INTERNATIONAL CONGRESS OF RADIOLOGY.

THE International Congress of Radiology which, as we have already announced, will be held in London from July 1st to 4th, may certainly be regarded as an important node in this rapidly growing branch of medicine, for in its size and scope it will be greater than any such assembly hitherto held. The Congress is the direct outcome of one of the first proposals made by the British Institute of Radiology on its foundation some two years ago, and the number of foreign countries represented on the conference programme forms a very striking proof of the high value that is set on the international discussion of the many problems with which radiology is now faced. In this connexion we might draw attention to the letter on p. 1370 of this issue, setting forth a scheme proposed in Vienna for an international association of teachers of medical radiology. The United States of America, France, Germany, Austria, Belgium, Norway, Sweden, Denmark, Italy, Czecho-Slovakia, Switzerland, and Russia are among the countries represented at the Congress, and well represented. The meetings will be held in the Central Hall, Westminster, where an exhibition of apparatus will also be on view. The Congress will be officially opened on July 1st at 2.30 P.M. by the Duke of Connaught, accompanied by the Minister of Health (Mr. Neville Chamberlain). On the previous evening, June 30th, a preliminary reception will be held by the President of the Congress, Mr. Thurstan Holland, at the house of the Royal Society of Medicine, 1, Wimpole-street, W. The official Congress dinner will take place on the evening of Thursday, July 2nd, in the Great Central Hotel. The work of the Congress will be divided into three sections: Physics, electrotherapy and actinotherapy, and radiology respectively. On the morning of Wednesday, July 1st, Sir William Bragg and Dr. Béclère, of Paris, will open an important joint discussion between the sections of physics and of radiology on international units and standards for X ray work. In the evening the Sylvanus Thompson Memorial Lecture will be given by the Duc de Broglie on Absorption of X and Y Radiations and the Secondary Radiations which Accompany Them. On Thursday morning, July 2nd, various papers will be read in all three sections. Discussions on electrotherapy and actinotherapy will be opened by Dr. E. P. Cumberbatch and Sir Henry Gauvain respectively. In the afternoon the physics section will visit the National Physical Laboratory at Teddington. On Friday, July 3rd, discussions in the sections of physics and actinotherapy will be continued, while in the radiology section papers will be read on the thoracic organs and X ray therapy. In the evening the Mackenzie Davidson Memorial Lecture on the relationship of radiology and surgery will be delivered by Sir Berkeley Moynihan. On Saturday morning, July 4th, papers will be read on the diagnosis of diseases of the nervous system and on X ray therapy, and at 12.15 P.M. a meeting of the international delegates will be held to consider the formation of an international committee. The office-bearers of the Congress are as follows:—President: Mr. Thurstan Holland. Vice-Presidents: Dr. A. E. Barclay (President of the Rontgen Society), Dr. Stanley Melville (President of the Electrotherapeutics Section of the Royal Society of Medicine), and Sir Humphry Rolleston (President of the British Institute of Radiology). General Secretary: Dr. Stanley Melville. The joint executive secretaries are Drs. J. E. A. Lyndham and J. Muir, from whom copies of the programme and other information may be obtained at 32, Welbeck-street, London, W. 1.

ACTION OF WATER ON COPPER SERVICE PIPES.

A FEW months ago we directed attention to a pamphlet which was being widely distributed by the Copper and Brass Extended Uses Council advocating the use of copper for service pipes for water distribution, and we then remarked that little was known about the action of various types of water upon copper, and that before the general use of this metal could be advocated the subject seemed to require investigation. A second edition of the pamphlet has now been issued quoting freely results obtained by Dr. J. C. Thresh with various waters, which were the subject of a special article in THE LANCET of March 28th last. It was shown in this article that practically all waters—acid, neutral, or alkaline—act upon copper, the reaction taking place between the oxygen in solution and the metal, a hydrated cupric oxide probably being formed which is very slightly soluble in acid-free water. If a trace of copper as sulphate is added to pure distilled water and the solution is then rendered alkaline by the addition of a trace of potassium hydrate the liquid remains clear and bright and the copper therein can be easily estimated. If the liquid, however, is filtered through paper most of the copper is removed, and if filtered through asbestos or a Pasteur filter, the whole of the copper disappears. Hence the hydrate formed probably exists in a colloidal condition. If the alkaline hydrate solution is acidified with carbonic acid, filtration produces the same effect as with the alkaline water, but if acidified with the merest trace of acetic or other acid, filtration removes none of the copper. These facts explain the action of natural waters. If the water contains no free acid save carbonic the amount of copper taken up is exceedingly

small, varying from 0 to 0·1 per 100,000, but in the presence of any stronger acid, as in many moorland waters, the quantity taken up may even exceed 0·5 per 100,000, its amount depending upon the free acid present. With such acid waters copper dissolves in amounts which may be dangerous to health, and in time also the life of thin copper pipes may be affected. Copper pipes of suitable thickness for non-acid waters are now cheaper than lead pipes of corresponding strength, a point which is dwelt upon in the pamphlet, but it is obvious that however slight the action of the water on the metal there will be a tendency in time to reduce the thickness and the pressure resistance of the pipes. It is, however, argued that the natural tendency of the action of a water on copper piping is to form a microscopical film and thus to slow down. Laboratory experiments confirm this alleged tendency for the rate of action to decrease, but not with all classes of water.

The Ministry of Health in their Model Specification for Copper Pipes recommended pipes a little stronger than those suggested by the Council, and until such pipes have had an extended trial the Ministry's proposals would be the safer to accept. In any case it is certain that copper is much less readily oxidised and much less dangerous to health than lead. Copper so far as we are aware is not cumulative in the system. Dr. Thresh came to the conclusion that if any water did not take up more than one-tenth of a grain of the metal after being in contact therewith for 24 hours there would be no danger to health. In actual use water would rarely stand in contact with the metal pipes for more than eight to ten hours, hence it would not take up this quantity. In all cases water which has stood for the night in any metal pipe should be run to waste in the morning. The water which afterwards passes will thus have been in contact with the metal for a much shorter time and will contain very little if any copper in solution or suspension. The remarks on tin-coated lead pipes are worth noting. Common tin coatings, alloyed with lead, it is stated, are as dangerous as lead itself. Copper with a coating of 50-50 tin and lead was found to surrender as dangerous an amount of lead to a plumbo-solvent water as did lead itself. Unless, therefore, pure tin coating is insisted upon and supplied, tinning is a snare. In the experiments quoted, copper of a high degree of purity was used and the results only apply to pipes made of such metal; the copper used in water services should therefore comply with the specification quoted in the pamphlet.

We are not concerned with the many other advantages claimed by the Copper and Brass Extended Use Council as the result of the substitution of copper for lead or iron. The report has been compiled with such care that the conclusions are likely to inspire confidence.

THE ASSESSMENT OF IMPROVEMENT IN HEARING.

MEDICINE suffers under the disability that it is not an exact science; in statistics referring to the results of any form of treatment we frequently have to be content with such expressions as "better" or "worse," "improved," and "in statu quo," and we seldom have an exact scale by which to measure the degree of improvement or its opposite. But occasionally an opportunity occurs for making more accurate measurements of results. In THE LANCET for May 2nd there appeared a description by Mr. C. M. R. Balbi of the audiometer, an electrical instrument designed to produce sounds of a frequency ranging through the length of the audible scale, the amplitude of which can be varied in intensity and accurately measured. With an intelligent subject the limits of audition for a tone of any frequency can be measured and plotted on a chart. In our next issue, that for May 9th, Mr. George C. Cathcart described the results of his treatment of chronic progressive deafness by the electrophonoide, an instrument, also electrical, which produces sounds of any required pitch and intensity, and which appears to give beneficial results by causing vibration of the tympanic membrane, vaso-dilatation of the vessels, and stimulation of the nerve-endings in the organ of Corti. Mr. Cathcart made the definite statement that of 100 cases of chronic progressive deafness, examined and considered incurable by other otologists, 68 per cent. have been improved after treatment by this instrument; but such a result does not appear to have been obtained by others, and the opinion has been expressed that this good result is in part due to the effect of suggestion. This would now seem to be the opportunity to use both instruments in conjunction, and to test the actuality of the results of treatment by an exact measurement of the hearing, plotting out on charts the auditory field in a number of cases before and after treatment.

A MATTER OF PRINCIPLE.

Dr. Olive Langmead recently resigned her post as part-time officer for maternity and child welfare under the Bethnal Green Borough Council. For a number of years she had been using two brands of dried milk for infants who required to be artificially fed. The Public Health Committee of the Council passed a resolution that these brands were to be discontinued in favour of another, and Dr. Langmead sent in her resignation on the ground (1) that she could not undertake responsibility for the health of infants if obliged to use a brand of milk with which she was unfamiliar; and (2) that she could not accept dictation from a lay committee upon medical matters. We have gone carefully into the circumstances attending her resignation and are satisfied that it was in accordance with the ethical principles which govern medical practice. Contrary to popular belief, these are framed for the safeguarding of the public, and Dr. Langmead's action is justified by her estimate of her public responsibility.

THE BATEMAN APPEAL.

As already explained in THE LANCET, it has been felt that material assistance ought to be offered to Dr. Bateman to meet the legal expenses of his successful appeal and to make good the deficiency in his professional income. Accordingly the Bateman Fund has been opened and lists of contributions have appeared in recent issues. We have received additional contributions as follows:—

	£	s.	d.
Already received and acknowledged ..	482	16	0
Messrs. Amery Parkes and Co., Solicitors	5	5	0
Dr. Agnes Savill	2	2	0
W. M.	2	0	0
Thomas Laird	1	0	0
	£493	3	0

Remittances should be forwarded to the Manager of THE LANCET, 423, Strand, W.C. 2, and made payable to the "Bateman Fund Account."

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The thirty-second meeting of the Commission was held at the Home Office, Whitehall, on June 18th, Lord Lawrence of Kingsgate in the chair. Evidence as to the supply of medicines, drugs, and appliances under the insurance scheme was submitted by the Retail Pharmacists Union, represented by Mr. A. R. Melhuish and Mr. G. A. Mallinson; and by the Incorporated Society of Pharmacy and Drug Store Proprietors, represented by Mr. W. Huntrods and Mr. A. Hutchinson. Thereafter, Sir Cooper Perry and Dr. James Mennel, representing the Chartered Society of Massage and Medical Gymnastics, gave evidence on the question of including massage and medical gymnastics in the insurance scheme; and evidence as to dental benefit was given of behalf of the Ivory Cross by Mr. W. F. Mellersh, Mr. C. Davis, Mr. H. D. Grant, Mr. John Hall, and Miss A. E. Fletcher. The Commission announce that proof copies of the oral evidence and the relative statements submitted at the meeting of May 28th, 1925, may now be obtained from H.M. Stationery Office (2*s.* 3*d.*).

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXXVIII.

THE TREATMENT OF WARTS AND MOLES

Warts.

THE common wart is of infective origin and autoinoculable, and is most frequently seen on the dorsal aspects of the fingers, about the knuckles, and round the nail-folds. These villous papillomata are easily contaminated with dirt and therefore usually of a brown or blackish colour. In association with the "mulberry" tumours there are sometimes found a flat variety (*verrucæ planæ juveniles*) on the face, particularly of children, thus suggesting their contagious nature.

Local treatment in cases of multiple warts of children may be preceded by oral administration for a week or two of magnesium sulphate (dose according to age), or lime water, half a pint daily (Sequeira). Glacial acetic acid is the best local caustic and should be applied twice daily, the surrounding skin being protected with vaseline. Care must be taken when it is used on the face; a 5 per cent. solution of resorcin and salicylic acid in spirit is a better application in this situation. Ultra-violet rays from the Kromayer lamp in skilled hands will also effect a cure of this superficial type by causing a general exfoliation of the parts irradiated.

The thickened chronic warty growth on the knuckle may have to be attacked with the actual cautery. This is not necessarily a painful procedure, and in adults no anæsthetic is required. The cautery point should have a cutting edge which is allowed to sink vertically in parallel lines at a dull red heat into the excrescence until the patient complains of pain. This method is especially useful in cases in which the fold of the nail is involved.

Plantar warts, owing to their situation and configuration (apex of a pyramid directed upwards), are worthy of special notice as they cause great pain on walking. There may be a group of two or three such conical tumours on the heel or ball of the great toe. Pain is almost invariably relieved and walking rendered possible by surrounding the warts with a ring of felt, to take the weight of the body. The best curative agent is radium, an unshielded applicator of full strength being applied for an hour to an hour and a half.[1] The wart is usually extruded in about three weeks, within which time a further application should not be made. X rays (2 *β* dose), through a half millimetre aluminium shield, may be substituted for radium and given at intervals of ten days.

The *filiform* wart, most commonly seen on the mucous membrane of the external genitals, or on the lips, or on the skin of the eyelids, has probably the same ætiology as the flat wart. Its minute size and the delicate character of surrounding structures contraindicates the use of caustics. Careful removal with the cautery is the simplest and safest procedure.

Venereal warts are usually massive cauliflower-like excrescences about the external genitals of persons with gonorrhœa or other specific infection in which discharges occur. They are easily contaminated with the organisms of secondary sepsis and soon become an exceedingly offensive complication. The anal mucous membrane may also be involved. Frequent washing with lotio nigra, and the liberal application of a 5 per cent. calomel dusting powder should precede more radical measures, and are sometimes successful in causing involution. Surgical ablation with the sharp spoon under anæsthesia is the usual procedure in these cases, but a more modern method which precludes the possibility of hæmorrhage is the diathermy current. The excrescences are well soaked in saline, a flat applicator electrode is held against them, and the current turned on slowly until they coagulate, whiten, and begin to steam, owing to the heating up to boiling-point of the contained fluids. Charring by spark discharge (fulguration) should be avoided. Frequent dusting with an antiseptic powder is the only subsequent treatment required. To prevent recurrences after removal it is, of course, essential to treat the associated specific infections. A few doses of X rays (½–¾ *β*) through a ½ mm. shield may be tried at weekly intervals when surgical procedures under anæsthesia are refused or inadvisable, and chemical caustics, such as pure phenol or acid nitrate of mercury, may also be used. In this case great caution must be used in protecting surrounding parts.

Seborrhœic warts occur in association with the seborrhœic diathesis on the scalp and cause annoyance by the constant trauma of the brush and comb. Here again the actual cautery is the best and cleanest ablation method; recurrences may be prevented by prescribing an antiseptic hair lotion. Another type of seborrhœic wart occurs on the back, flanks, and abdomen of predisposed persons of both sexes after middle-age. They are black or yellowish-brown in colour, associated with a greasy skin, and do not undergo malignant change. Sometimes pruritus is complained of and removal requested. Mild exfoliative doses of the Kromayer lamp (ten minutes at three feet) at weekly intervals, or the X rays (¾ *β* unshielded) once or twice at an interval of 14 days, usually effect a cure, which has to be maintained by the daily use of a sulphur or sulphur-naphthol soap; this is sometimes effective without other treatment. More chronic isolated lesions can be removed by soap plaster or salicylic plaster (5 per cent.) applications, and if these fail recourse may be had to freezing (¼–½ minute) with the carbon-dioxide snow pencil.

Warts which Tend to Ulcerate.

Senile warts, arsenical warts, warts from the constant exposure to sunlight, X rays, tar exhalations, paraffin and soot, have to be sharply differentiated from the foregoing types, as they not infrequently tend to ulcerate and to be transformed into epitheliomata. Senile keratosis or warty patches on the face or backs of the hands in persons over 60 are not uncommon in fair subjects, especially if they have lived in tropical climates. Usually the condition is associated with small areas of cutaneous atrophy and brown or yellowish pigment spots. In the other types which resemble the senile variety clinically, a history of causation is usually forthcoming. In such conditions removal of the warts should always be advised and may be effected with CO_2 snow, diathermy, or surgical excision. It should be remembered that ineffective radiotherapy may actually stimulate these growths, and for this reason X rays and radium should be employed by an expert only, or in cases which can be kept under observation for a long time.

Moles.

All moles are of congenital origin, although not always apparent at birth. They are arbitrarily classified as pigmented, non-pigmented, and hairy. In size they vary from a pin's head to a large area involving half the face or one buttock or even more. The treatment which is always sought for at some period or other of the patient's life, either on account of the disfigurement or for fear of subsequent malignant changes, must be guided by the size and situation of the anomaly. Once decided upon, radical procedures should not be postponed as moles grow with the child.

Small non-pigmented moles can be easily removed by freezing for periods varying from 40–60 seconds, according to their apparent depth in the subcutis. The ensuing blister should be pricked aseptically and then dressed with calamine lotion. The scab should

[1] Vide Clinical Index of Radium Therapy (A. E. Hayward Pinch), pp. 40, 121.

never be forcibly removed but allowed to separate spontaneously. The procedure may need repetition.

Hairy moles, if very small, should be treated by electrolysis of the individual hairs. The pigmented elements tend to fade as the hair-bulbs are destroyed. Remaining pigmentation can be dealt with by freezing. For larger moles, especially when warty, excision followed by grafting or the application of diathermy as described in the section dealing with venereal warts, are the methods of choice. Radium, X rays, cautery, and chemical caustics are not advised in this type of mole.

HENRY C. SEMON, M.D. Oxf., M.R.C.P. Lond.,
Physician for Diseases of the Skin, Royal Northern Hospital.

The Services.

ROYAL ARMY MEDICAL CORPS: OFFICERS FOR THE SUPPLEMENTARY RESERVE.

IT is officially announced by the War Office that commissions in the R.A.M.C. Supplementary Reserve of Officers are open to members of the medical profession engaged in civil practice. The object of this reserve is to complete and maintain the various medical units of the regular army at war strength on mobilisation, and the officers are divided into two categories. Those in the first category (Category B) have to undergo a preliminary training at the R.A.M.C. depôt, and an annual training of 14 days with a selected formation or unit of the regular army. The preliminary training lasts normally for six weeks, but in the case of officers holding Certificate A or B medical, of the Officers' Training Corps, it is either dispensed with entirely or limited to three weeks. The other category (Category C) is intended for medical men with previous service and those possessing special professional qualifications. Officers in this category are not required to do either preliminary or annual training. The present requirements include a number of specialists in surgery, medicine, mental diseases, X rays, pathology, bacteriology, and hygiene, who will as far as possible be employed in their special subjects on mobilisation.

All commissioned officers are paid an annual gratuity of £25, and those in Category B in addition receive pay and allowances as for regular officers during all training. Normally, an applicant's age should not exceed 32, but this limit may be dispensed with in special cases. The rank of appointment is that of lieutenant. Promotion in Category B will be to captain after three and a half years' commissioned service, to major if qualified after 12 years' commissioned service, after which period officers will be transferred to the Regular Army Reserve of Officers; in Category C promotion to captain after three and a half years' commissioned service, and after ten years' service transferred to the Regular Army Reserve of Officers. A candidate for Category C who served as an officer in the R.A.M.C. during the late war will be allowed to count such service for rank on appointment, for promotion to captain, and towards the ten years period of service preceding transfer to the Regular Army Reserve of Officers. Forms of application for appointment can be obtained on written request to the Under-Secretary of State for War (A.M.D.1), War Office, Whitehall, London, S.W. 1.

ROYAL NAVAL MEDICAL SERVICE.

H. L. Bernstein and H. W. Strong to be Surg. Lts.

ROYAL ARMY MEDICAL CORPS.

Capt. D. A. Chalmers is granted the temp. rank of Capt. and relinquishes the rank of Capt.

ARMY RESERVE OF OFFICERS.

Maj. C. H. Hopkins, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

TERRITORIAL ARMY.

Supernumerary for Service with the O.T.C.: Maj. A. E. Webb-Johnson resigns his commn. and is granted the rank of Col. with permission to wear the prescribed uniform.

Edinburgh University Contgt. (Medical Unit), Sen. Div.: Lt. N. Kerr to be Capt.

ROYAL AIR FORCE.

Flying Officer L. P. McCullagh is granted a permanent commission in the rank stated.

Flight Lt. W. G. L. Wambeek is promoted to the rank of Squadron Leader.

Special Articles.

THE MILK-SUPPLY AND ITS IMPROVEMENT.

BY WILLIAM G. SAVAGE, B.Sc., M.D. LOND.,
COUNTY MEDICAL OFFICER OF HEALTH, SOMERSET.

III.—REMEDIES TO IMPROVE THE MILK-SUPPLY.

(*Concluded from p. 1314.*)

Grading of Milk.

SINCE milk is one of the few foods not graded, and since there are material differences in the quality of milk as supplied, it is but logical to suggest that milk also should be graded according to its quality. The unanswerable objection is that milk is too valuable as a food to perpetuate the poorer grades of milk as the inevitable food for the poorest, and it is scarcely an adequate answer to say they get it now. Two distinct procedures have been tried. The English plan, the legal sanction for which is contained in the 1922 Milk Act, merely provides for certain superior classes of milk (Certified, Grade A (tuberculin tested), and Grade A), and leaves the rest of the milk-supply untouched. Its value is educative and few would suggest that it is more, or that it is a serious contribution to a purer supply. As an educative influence undoubtedly these graded milks have done much good. They would do a good deal more if they were not hampered by their having to be administered by three different authorities, an illustration of the muddle our local government system has passed into owing to the overlapping of authorities. The principle should be extended and completed logically by having a Grade C (see below) for very contaminated milks.

The other plan of grading is to grade the whole of the milk-supply, and this has been adopted in some cities in America. Originally, as in New York, there were three grades, A, B, and C, but now different milk ordinances include a bewildering variety of grades. There is great lack of uniformity both as to the number of grades and the methods of assessing each grade. The latter is sometimes bacteriological alone, for others a mixture of bacteriology and score card methods. To put in force in this country such a system would mean a revolution in our methods of control, including an extensive and sustained system of bacteriological examinations and the provision of an adequately trained body of special inspectors. At the present time it is not practical politics, and a number of valid objections can be raised which are not easy to overcome.

Clean Milk as a Business Proposition.

The elimination of the dangers of milk as a vehicle for the spread of tuberculosis and acute diseases is a different question from what may conveniently be called the "clean milk" problem. For the latter a good deal can be done by a firmer and more efficient legal control, still more by direct educative influences brought to bear upon producers and distributors, but the problem is likely to remain a problem until effective steps are taken to make clean milk handling a better business proposition than dirty milk handling.

To make this clear it is necessary to look at the matter from the angle of view of the milk producer and distributor. The milk producer is a farmer who is not actively hostile but usually finds considerable difficulty in visualising his deficiencies as regards the case of milk. This difficulty is not lessened by the fact that the majority of sanitary inspectors who supervise him have but a limited appreciation of what clean milk means, and are very apt when they do take action to concentrate upon the need for expensive buildings and to neglect essentials of methods. As a farmer he is bound to conduct his milk production on business lines—in other words, he wants to produce

milk at the lowest possible cost and sell it at the highest possible price. It costs more to produce clean milk, but unless he produces a specially clean article which he can label as a graded milk and sell at a higher price, he obtains no more for clean than for dirty milk. For the ordinary producer the scales are weighted in favour of dirty milk. The solution is to make the balance tip the other way. Simple education of the milk trade without a concrete business objective has been tried for 20 years and more and has done very little.

Such a solution may be sought along several lines. One is to make the consumer realise the kind of milk he should receive and insistently demand it. The distributor will then have a direct incentive to supply clean milk and will take steps to obtain and supply it. Up to the present I have failed to find a distributor who will give a better price for clean than for contaminated milk. In the absence of an insistent demand there is no inducement for him to do so.

In this connexion it must be admitted that the medical profession does not fully utilise its opportunities. Individual members often fail to impress upon their patients the necessity of obtaining their milk from satisfactory sources, and producers of graded milks have complained to me that they have not obtained the support of medical men in their districts in their endeavour to provide a pure supply. As members of hospital staffs they are usually in a position to stress the need for the hospital milk-supply being of high bacterial quality, but it seems to be the exception for this to be done. Within the last few months, through the courtesy of the hospital secretaries, I have obtained particulars of the terms of the contracts for milk for six large voluntary hospitals. Four of them impose no conditions as regards bacterial purity, one requires the milk to be Grade A, one makes no bacterial stipulation, but submits samples periodically to the hospital pathologist for bacteriological examination. Insistence upon reasonable standards of bacterial purity would not only benefit the hospital but serve as a valuable educative influence upon the production of a cleaner milk-supply. A second line is to make the producer and distributor realise that the consumption of fresh milk is influenced by the quality of the article supplied, and that an increase in the supply of fresh milk and a diminution of the use of preserved milks can be materially stimulated by the supply of a better quality article. A third line is to penalise really bad milk and make it unsaleable. This must operate by eliminating the hopelessly bad producer, and by stimulating the mediocre producer to better his methods. In my opinion it is essential that this third line of action should be made to operate, but the method of doing it requires careful consideration.

Unless specially trained and efficient inspectors are available it is dangerous to make this power dependent solely upon the results of inspections of the conditions of milk production. After all, the essential point is whether or not reasonably clean milk is being obtained, and this can best be judged by direct bacteriological examination of the milk. The existing grades should be augmented by a degraded milk—Grade C, milk below any reasonable standard of purity. The production of such a milk would be suspected by inspection, proved by bacteriological examination. If after several warnings conditions were not considerably improved, the milk-supply from that producer would be labelled *Grade C*. It should be illegal for any wholesaler to mix it with other milk, and it could only be sold as Grade C and also marked "inferior quality milk, which should be boiled before use." Milk could only be removed from that grade after definite alteration of quality, as shown by an improvement of methods and production and a series of bacteriological examinations, paid for by the producer. The conditions for Grade C would be laid down by the Ministry of Health, and could be so drawn as to include at the outset only thoroughly bad milk, to be tightened as average conditions improved.

The beneficial effect of such a logical addition to the grades would extend far beyond the actually small number of producers so penalised, since the knowledge of its existence would have a highly salutary educative influence. It would in practice only penalise the small number of incorrigible producers whose methods and practices are a disgrace. The average producer should welcome it, since it would remove the unfair competition of milk of this type.

Bacteriological examinations of milk are extremely valuable in connexion with efforts to produce a pure supply.[1] Their greatest utility is as a sorting agency, and to see that graded milks maintain their stated standards rather than as a means of fixing bacteriological standards, failure to comply with which is a punishable offence, a procedure in favour in some American cities.

The Bogy of Increased Cost of a Better Milk-Supply.

The opponents of a better milk-supply always advance the argument that a pure supply means increased cost and whatever we do we must not increase the cost of milk. The argument is not very convincing, and might be applied to every foodstuff. We have witnessed, from the action of economic causes, an enormous increase in the retail price of milk, but there is little evidence that it has materially affected the consumption of milk. A cleaner milk will ensure a larger consumption of milk, yielding a bigger profit and so possibilities of reduction on the retail price. Milk is no exception to the ordinary business postulate that a good article pays its way. Purely as an *agricultural* problem it is arguable that when the routine had been acquired a clean milk would pay itself from the saving of pasteurisation, prevention of losses on soured milk, and increased health of cattle from a diminution of bovine tuberculosis. There is no real reason why the provision of clean milk should send up the cost of production appreciably and more than temporarily. Many thousands of milk producers do supply good milk at ordinary prices and make it pay.[2] The committee on the production and distribution of milk pointed out that there are numerous ways (eight are given), many now neglected, by which the costs of milk production can be reduced. If it is so important to keep down the cost of milk, why allow these to be neglected and fasten attention on the one factor which is of public health importance? To take but one of them, there are many thousands of farmers who never keep milk records, and who, in consequence, are milking cows which are absolutely uneconomic. This one reform alone would pay all the additional costs of the difference between producing clean milk and the present average quality milk. This cost bogy argument should leave the medical profession cold.

While the cost of production and of distribution need not be materially increased for average clean milk a distinction must be made as regards the cost of supervision. Undoubtedly the cost of supervision must be considerable, especially if part of a system to eradicate tuberculosis. This should not fall upon the milk trade, and therefore would not affect the retail price of milk. It is part of the general public health expenses of the country. The greater part of the milk of the nation is produced in the rural areas while most of it is consumed in the urban districts. There is, therefore, considerable justification for the plea that material contributions towards the cost of supervision should be made by the urban areas. Under our present system of government such financial assistance can best be given by grants in aid from the Ministry of Health to pay part of the costs of supervision. This would also have the effect of making for efficiency and for uniformity of administration since neglectful authorities would lose their grant.

[1] See article by the writer: World's Dairy Congress, 1923, Proceedings, vol. ii., p. 1295.

[2] My home supply is a milk bottled at the farm, and which consistently contains far fewer bacteria than the legal limits of Grade A, and it is delivered to me at the price of ordinary milk.

Another favourite argument advanced, that proper milk control means new hordes of officials, is singularly inappropriate when applied to milk. Control over the satisfactory production and handling of milk is best judged by bacteriological methods. Such methods can pick out with tolerable certainty and uniformity the milk producers and others whose methods of handling milk are below a reasonable standard. One bacteriologist can examine a very large number of samples per day, and with his help the number of field inspections required is immensely reduced. Attention can be concentrated upon the worst and a steady levelling up process inaugurated

Summary of Remedies Proposed.

With a subject of such magnitude as the milk problem, and one which has been the object of so much detailed study, it is impossible to cover every phase in the limits of space available. What has been attempted has been a rapid survey of the present position and an outline of those remedies which seem to me to be of most utility. As regards these remedies the most essential may be summarised as follows :—

1. A continuance of the present system of grading, for its educative influence, but with the addition of a *Grade C* milk designed to repress the very dirty minority of producers.

2. Systematic efforts to educate the consumers to appreciate the importance of good quality milk and the value of milk as a food. Education of the milk trade as to the need for improvement in methods and the financial advantages involved. In connexion with such educative activities the medical profession could play a powerful and influential part if they were agreed as to the lines to follow.

3. Additional legislation : (*a*) To enable effective powers to be obtained to deal with bovine tuberculosis. (*b*) To define the minimal requirements of clean pure milk and provide for their compliance. (*c*) To give extended control to prevent the infection of milk with pathogenic bacilli. (*d*) To simplify the control over milk by its entire transference to the larger local authorities. (*e*) To provide for the payment of grants in aid from the Treasury through the Ministry of Health towards the cost of the supervision over milk production and distribution.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

French Vital Statistics for 1924.

THE figures recently published by the Ministry of Labour, Hygiene, and Social Welfare give an instructive summary of the relation of births to deaths in France during 1924. There were 752,101 births to 679,885 deaths, or a surplus of 72,216—a surplus which, considering the greatness of the numbers concerned, is a very small margin on the right side. The excess of births over deaths per 10,000 inhabitants was 19 in 1924 as compared with 24 in 1923, 18 in 1922, 30 in 1921, and 41 in 1920. It is extraordinary, one might even say amazing, that this excess between 1920 and 1924 should have fallen from 41 to 19 per 10,000 inhabitants. Since 1920, when the number of live births throughout France was 834,411, there has been a marked decline in this figure ; in 1923 it had fallen to 761,861, and in 1924 it was further reduced to 752,101. In 1920 there were 213 live births for every 10,000 inhabitants, whereas in 1924 this figure was reduced to 192. Local differences in the "coefficient of natality" in 1924 were considerable. Thus, in Pas-de-Calais there were 306 live infants born per 10,000 inhabitants, whereas in the Côtes-du-Nord this figure was only 230. The number of infants born dead, or dying before registration, showed the same decline as that in the number of live births. The divorce statistics showed some curious fluctuations. The year 1921 seems to have marked the crest of the present divorce wave with a total of 32,557, the number of divorces in 1924 being only 21,033. In 1900 there were only 7363 divorces, and in 1913 this figure had jumped to 15,372. Divorces, it would seem, are largely a matter of fashion and are probably much more subject to such influences as suggestion than are births and deaths. A comparison of the numbers of divorces in the different areas indicates that industrialism gives rise to conditions favouring divorce, the highest divorce figures being found in the industrial Departments, and it is instructive that, while in one industrial area there were as many as 241 divorces per 100,000 inhabitants (Department of the Seine) there were only 23 divorces per 100,000 inhabitants in another area (Côtes-du-Nord). With regard to the narrow margin between the births and deaths in France, the modern tendency is to widen this margin rather by measures calculated to improve the general health and add to the longevity of the living than to swell the numbers of the new-comers.

Copyright of Medical and Pharmaceutical Lectures.

The eleventh Chambre Correctionnelle has recently been the scene of an interesting lawsuit concerned with the copyright of the spoken word. A publisher, Mr. Lambert, had made use of shorthand notes of lectures given by professors of the faculties of medicine and pharmacy, circulating these lectures weekly to his subscribers. In the course of the judgment passed by the Chambre, which imposed a fine of 50 francs on the publisher, it was stated that "the laws concerning copyright apply to the spoken word, particularly to the lectures of professors." Each of the professors whose lectures had thus been published without their previous consent was awarded 100 francs in damages. No one in court recalled the precedent of a hundred years ago when Sir Astley Cooper and John Abernethy bitterly resented the publication of their lectures in THE LANCET. It is not yet clear what effect the decision of the French court will have on the reporting of lectures and proceedings of medical societies, but the guess may be ventured that there will be little change. Indeed, as most professors are human, or nearly so, it is probable that if their spoken words were to be held strictly sacrosanct and respectfully ignored, more pain would be inflicted than if a verbatim report were to be given all the publicity at the command of the most pushing of impresarios. A verbatim report is, by the way, to the carefully edited report what the amateur photograph is to the touched-up product of the professional photographer, and it is sometimes an act of refined cruelty to broadcast every word of a volubly inaccurate speaker. Provided public speeches are edited as well as reported fairly (in fairness to the speaker rather than to the audience), there is seldom much likelihood of questions being raised either in France or in England as to the copyright of the spoken word.

Presence of Tubercle Bacilli in the Pharynx of Infants with a Positive Skin Reaction.

The tuberculin skin test is of absolute and indisputable value in the difficult matter of diagnosing tubercle in infants, but it is also of importance to know whether the infant, like the tuberculous adult, is liable to spread contagion. The infant, of course, does not sin by spitting, and the search for the tubercle bacillus in the pharyngeal mucus, taken directly or by means of lavage from the stomach, has given very inconstant results. The very small number of bacilli which may be present are found with great difficulty. Drs. Lesné and Langle conceived the idea of injecting this pharyngeal mucus subcutaneously into a guinea-pig. The results of their experiments showed that two-thirds of the infants with a positive skin reaction, who were infected with tubercle in either a latent or an active stage, carried virulent tubercle bacilli in the pharynx. On the other hand, injections made from infants with a negative reaction produced no effect on the guinea-pigs. The bacilli are probably derived in most cases from pulmonary lesions opening into the bronchi. Yet if no pulmonary lesions were discoverable on radiographic examination, which is not uncommon, or if the infant has succumbed without

a caseous focus being located, it may be permissible to suppose that the pharynx was not the portal of exit of the bacilli but the portal of entry. The organism might be present in the pharynx and, without apparent lesion of the mucous membrane, might infect the subject. However that may be, we should not regard infants with a positive skin reaction as non-contagious, although they do not spit. They may infect healthy children with whom they are placed in contact, either directly or indirectly by the medium of such articles as indiarubber teats, spoons, and towels. Therefore, before allowing infants with a positive reaction to associate with non-tuberculous children, the pharyngeal mucus ought to be tested by inoculating a guinea-pig, and, if it is thus proved infective, all necessary precautions should be taken.

The Vaccine B.C.G.

Before the Academy of Medicine Dr. Calmette recently gave the clinical and experimental results of preventive vaccination against tuberculosis in new-born children by means of the vaccine Bilié-Calmette-Guérin, known as B.C.G. Many doctors make use of this vaccine, especially in cases where the children have been born in a home in which tuberculosis is already rife. The results have been very satisfactory. Not one of the 178 infants vaccinated three years ago has died of any infection which might be called tuberculous; 94 of them which were recently examined are in perfect health and their growth has been normal. From July 1st, 1924, to June 1st, 1925, 2070 new-born infants were vaccinated by the B.C.G. supplied by the Pasteur Institute without any untoward results. The method of vaccination consists in administering three doses of the vaccine in a teaspoonful of milk at intervals of 48 hours when the baby is from 3 to 10 days old; 137 of these children vaccinated in this way in families where the exposure to tuberculous infection was great have not furnished a single case of death from tuberculosis, while on the other hand the mortality of unvaccinated children under the same conditions stands at 32·6 per cent. in Paris during the first year of life, and at 24 per cent., on the average, for the whole of France. The experiments show that the vaccine B.C.G. confers on monkeys and young calves obvious powers of resistance to tuberculous infection, whether the latter is natural or artificial. It would appear therefore that this method of tubercle prevention in young children might be regarded as having no dangers and that its efficacy is beyond question. Further observations and the time factor will enable more definite pronouncements to be made on the practical value of this prophylactic measure.

Monument to the Members of the Paris Medical Faculty who Fell in the War.

A monument raised to the memory of the doctors and medical students who died during the war was recently set up in the medical faculty of Paris. The monument, which has been placed in the Salle des Pas Perdus at the foot of the staircase which leads to the library, is a bas-relief designed by the sculptor Raoul Besnard. It represents a corner of a battlefield where, on the right, a young military doctor in a pensive attitude is gazing at a group of stretcher-bearers carrying a wounded man to the aid-post. Above, the inscription runs "Facultas Parisiensis erexit suorum memor, 1914–1918," and beneath are placed the names of nearly 500 doctors or students of the faculty who died for their country. The President of the Republic performed the unveiling ceremony and was assisted by Mr. Appel, the Rector of the University; Mr. Colville, the Director of Higher Education; Mr. Rouget, the Director of Sanitary Services; Mr. Guillaumin, President of the Municipal Council; Dr. Roger, Dean of the Faculty of Medicine: and several other dignitaries, including the President of the Academy of Medicine. Speeches were delivered by the representatives of various medical bodies. Prof. Chauffard spoke for the Société des Amis de la Faculté de Médecine de Paris, by whose efforts subscriptions had been secured to raise the monument, and Mons. Beau spoke on behalf of the students. A poem composed by Prof. Charles Richet was declaimed by Mlle. Madeleine Roche, of the Comédie Française.

THE VIENNA EXHIBITION OF HYGIENE.

(FROM OUR OWN CORRESPONDENT.)

IN May of this year there was opened in Vienna an Exhibition of Hygiene which is attracting large crowds of visitors and which will add considerably to general knowledge of this subject. The exhibition consists of three distinct sections. The first section deals with man, his anatomy and physiology; the second with hygiene in general, and the third with the modern household from a hygienic view. The dominating idea in promoting the exhibition was that hygienic knowledge and hygienic empiricism should become the common property of the public.

The Anatomy of Man.

By means of large wax and plaster-of-Paris models, diagrams, and pictures of the different parts of the body, by comparative charts and original wet and dry specimens of anatomical and physiological interest, the lay public is enabled to learn what kind of machine the human body really is. The value of social hygiene, the knowledge of the laws governing the development and destruction of life—in short, the "legislature of living"—is impressed on even the most unobservant and incurious visitors. The section pertaining to man in general has been brought over from Dresden, where it formed the bulk of the celebrated hygienic exposition there. It is subdivided into sections dealing with prehistoric development of mankind, the osseous system, the muscles, the organs of nutrition, respiration, circulation and secretion, the brain and nervous system, and the organs of the senses (eyes, ears). Dynamometers, accessible to every visitor, show the "man in the street," what force is exerted by his own flexor muscles of the hand, or how the jaw is able to exert a pressure of more than 50 kilos to the square centimetre in cracking a hazel-nut. The method of converting food articles into energy, as effected by the digestive organs, is explained by means of large models. An exhibit called the "transparent man" is a great attraction. It consists of a collection of specially treated specimens, made transparent or translucent without dissection. By means of a secret process, entire organs, like the legs or arms of babies, the stomach of an adult, the pregnant uterus at various stages, the adult kidney or heart, have been made so transparent to strong light that all the details are visible. The collection shows well the development of a human embryo from the fifth week up to birth, the centres of ossification, and the gradual development of all other organs. The exhibit is contained in a dark room, and the objects are viewed against strong electric light.

Hygiene and Public Health.

The second section of the exhibition, which is devoted chiefly to the problem of hygiene, is subdivided into individual hygiene, collective hygiene, and general hygiene or public health. The leading idea is here also to impress upon the mind of the visitor the necessity of adapting life to the laws of hygiene—i.e., cleanliness, soberness, ventilation. Diagrams, charts, pictures, and statistical data serve this purpose. Thus numerous pictures illustrate the ways of infection with tuberculosis; dust inhaled by children, contamination by spitting, playing in the gutter, eating dirty food, kissing or careless coughing by diseased persons are shown—in rather crude pictures—to be the potent source of propagating all sorts of illness, especially tuberculosis. We see also the prophylactic measures taken by large institutions, such as the sickness insurance clubs or *Krankenkassen*,

to promote the health of their members. The ravages caused by tuberculosis and syphilis are illustrated in statistics taken from the reports of hospitals and lunatic asylums, and the results obtained by modern methods of treatment never fail to make a strong appeal to the uninitiated in these matters. A fairly large space is devoted to the infection of the body with parasites—tæniæ and nematodes and trematodes, as well as trichinæ are not infrequent in Austria, especially in rural districts—and their life-cycle, their methods of invading the host, as well as the ways to combat them are shown, and the infection of the blood with plasmodium is explained. Alcohol and its effect upon the organism receives prominence. Apart from the loss of money entailed by the nation's expenditure upon alcoholic beverages, the actual damage done by indulgence in alcohol to the liver, the brain, the kidneys, and the procreative organs is shown both in pictures and in wet and dry specimens. Statistics from lunatic asylums form a useful weapon in the fight against alcohol, which is slowly gaining ground in this country. The increase of total abstainers amongst the working classes, as proved by the membership of anti-alcohol clubs, is 60 per cent. in two years, but is still far from being general. Also the anti-nicotine movement is represented in the exhibition, chiefly by the products of a factory where, by a special process, 95 per cent. of the total nicotine contained in tobacco is removed. This movement is not very much patronised. A special part is devoted to the exhibits of the "Society of the Flame" (cremation).

Specimens Exhibited.

Amongst the numerous other exhibits, medical men will be interested in the collective expositions of the Vienna clinics. The surgical clinics have assembled collections of renal and vesical stones, of specimens showing injuries and diseases of the bones, and photographs demonstrating plastic surgery of the face; the internal clinics show pictures and photos, with explanations, of endocrine cases, of tuberculosis and its treatment, of blood diseases, and other special clinics make exhibits of their specimens. The excellent effects of open-air sports, swimming, and gymnastics on the adolescents or weakly children are well shown in a series of photographs taken from children's open-air colonies.

The value of the exhibition is increased by the exhibits of municipal and State authorities, showing the results obtained by introducing pure drinking water supplies to towns and cities as well as drainage arrangements. Free public lectures on a wide variety of subjects are given by eminent men every evening. Nearly all these lectures are illustrated by cinematographic demonstrations and have become a favourite attraction for visitors. The exhibition closes in July, but negotiations are taking place to make the exhibition, or part of it, a permanent institution like that in Dresden, for the benefit of the public, and there is little doubt that the attempt will be successful.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

THE POOR-LAW COMMISSION.

THE chief witness examined at the last meeting of the Commission on the Poor-laws was Dr. E. F. Stephenson, chief medical officer of the Department of Local Government and Public Health, who gave information as to the policy of the Department in regard to local hospitals. He said that it aimed at centralisation in each county, and that the county hospitals were fully supplied with X ray apparatus and other equipment. Since county infirmaries were taken over it was necessary to make arrangements for the people who were able to pay, and provision was now made for paying patients. Their great aim was to provide suitable treatment for the sick poor.

Hospital Medical Officers.

The minimum qualifications required for a medical officer of a county hospital were three years' regular practice of his profession, and at least one year's practice in surgical work. As regards surgeons, their aim was to employ full-time men for the county hospitals in which there was sufficient work. The usual salary was £500 a year, with free residence and the right to accept fees from certain patients in his hospital. The idea was if the beds were not required for poor patients they could be used for paying patients, but the first claim was that of the poor patients, except in very urgent cases, such as appendicitis. Whole-time medical officers in county hospitals were prohibited from taking outside practice, except as consultants. Questioned as to the advisability of having hospitals available within a radius of eight or ten miles for poor patients, he did not consider it necessary, as motor ambulances facilitated the transfer of patients. He did not think the hospital accommodation was sufficient in every case—e.g., in Co. Galway, where four cottage hospitals would be required. Dealing with vaccination, he said their vaccine department was a very good one, and every tube of lymph was examined three times before being issued to the public. Vaccination was well enforced, except in Co. Wexford and in some parts of Donegal. He also stated that the Minister for Local Government intended to introduce a Bill setting up a Selection Commission for the appointment of medical officers, the idea being to take the power of appointment from the local bodies.

Appointment by Selection Commission.

The most important part of Dr. Stephenson's evidence is that contained in the last paragraph. It is now generally admitted that even when acting with the purest intention, a local elective authority is not a body which can estimate accurately the professional standing and experience of candidates for medical appointments. In too many instances, notoriously, the members of the local authority have been entirely swayed by political and family influences. The Minister may, therefore, be congratulated on his decision. But the setting up of a Selection Commission is not a complete solution of the problem. Every committee of inquiry which has investigated the Poor-law medical service of Ireland has come to one conclusion, that the only satisfactory way of dealing with it is by transforming it into a national medical service with entry by competitive examination.

In Dr. Stephenson's evidence in regard to county hospitals, he stated that the usual salary for a county surgeon was £500 a year, with the right to consulting, but not to private practice. This salary is not sufficient to attract suitable men, and as a matter of fact, it has been difficult in the case of some recent appointments to obtain any candidates with appropriate qualifications.

Public Health Work in the Free State.

In the discussion on the vote for the Department of Local Government and Public Health in the Dail recently, the Minister, Mr. Burke, gave interesting information in regard to some of the activities which come under the supervision of his Department. Dealing with maternity and child welfare services, he said that infant mortality in 1924 was the lowest on record. The rate in urban districts was 102 per 1000, and in rural districts 55 per 1000, being an average of 10 per 1000 lower than in the preceding ten years. Under the schemes for the provision of meals for school-children, three county boroughs and 23 urban areas had been authorised to make expenditure for this purpose. Such expenditure was incurred during the year in only two county boroughs—Dublin and Cork—and in 13 urban districts. The urban authorities had been repeatedly reminded of their powers in this respect. But during the year schemes were only adopted in Clonmel and Rathmines. During 1923–24, 11,000 children were fed, of whom

5596 were in Dublin. The total cost was £12,762, and the amount authorised £5313 as a grant. The medical treatment of school-children would be dealt with under the new Act, but the medical administration of that Act would not come into force till October next.

Dealing with tuberculosis grants, Mr. Burke said full schemes were in operation in 22 counties and two county boroughs, and partial schemes in other areas. As a result of the compulsory notification of tuberculosis there would be a substantially larger number of patients in the future. During the year a new sanatorium had been opened at Renmore, Co. Galway. That institution was already full, and its extension was under consideration. The general mortality from tuberculosis had decreased considerably in recent years. It was 2·9 per 1000 in 1904, and in 1923 it was 1·41.

Rockefeller Fellowships in Public Health.

A Selection Committee appointed by the Minister of Local Government and Public Health has chosen three names for the Fellowships in Public Health offered to the Irish Government by the Rockefeller Foundation. The selected candidates are John D. Carroll, M.B. N.U.I., Robert Condy, M.B. Dub., and James A. Harbison, M.B. Belf. All of them possess the Diploma in Public Health, and have already been engaged in public health work. Two of them (Dr. Carroll and Dr. Condy) had war service in the Royal Army Medical Corps. The new Fellows will study in the United States for a period of six months, according to a programme to be arranged by the International Health Board of the Rockefeller Foundation. They have pledged themselves to accept appointments as county medical officers of health on their return to Ireland.

Research Work in Mental Disease.

The Minister for Local Government and Public Health, in a letter addressed to the Joint Committee of the Grangegorman Mental Hospital, has suggested the establishment of an institute for pathological research in connexion with the hospital. He states that the scheme in its scope should extend not only to original research, but also aim at providing a pathologist capable of advising the medical officers of Grangegorman and the officers of such other mental hospitals as would lend financial support to the scheme. Further, the laboratory would be a centre in which post-graduate work in this special department of medicine could be undertaken; and it might be anticipated that in time assistant medical officers, who at present go to England for instruction for the period of their study-leave, could obtain in Dublin a course of instruction equally valuable.

The Committee referred the letter to the consideration of their medical superintendent, Dr. J. O'C. Donelan, who, in reply, expressed the opinion that a pathological laboratory at Grangegorman might be developed into a valuable centre for work and study, but he did not think there could be much field for it in the immediate future, as there were at present three excellent schools of pathology in Dublin—Trinity College, University College, and the College of Surgeons—who would, he is sure, give any help desired. The bigger scheme hinted at by the Minister might be developed later. A scheme for a central laboratory for all the Irish mental hospitals would involve the appointment of a really first-class man devoted to pathological work, who would require one or two assistants. The best results would be obtained by beginning on a small scale.

The scheme put forward by the Minister was strongly urged by the medical profession some 25 years ago, but the Government of the day postponed their support. Up to the present the pathological work done in Irish asylums has been trivial in amount.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

FURTHER SITTINGS.

(*Continued from p. 1151.*)

THE Commission resumed its sittings on June 19th, Mr. H. P. Macmillan, K.C., the Chairman, presiding.

EVIDENCE OF TWO MEMBERS OF THE WANDSWORTH BOARD OF GUARDIANS.

The first witnesses were Mr. George Hill and Mrs. Glanville, two members of the Wandsworth Board of Guardians. Their submission was that the method of visitation carried out until a year or two ago, when the patients on visiting days were brought up and passed before the visiting guardians, was useless, and that in order to be of any real service there should be informal unnotified visitations, the guardians actually seeing patients in their usual conditions and surroundings. Section 201 of the Lunacy Act permitted these visits between 8 A.M. and 6 P.M. on any day, unless the medical officer stated that such visit would be injurious to a particular patient or patients. Mr. Hill said that when, five or six years ago, he first became a guardian he was told he could not visit the patients unless he intimated his wish beforehand. Asked whether the visitation as now carried on—namely, without prior notification—was considered an efficient safeguard against ill-treatment or other irregularity, Mr. Hill said he thought it was, and if a report was made by a patient and it seemed well founded, he reported it to his board. His committee (a special visitation committee) was not satisfied with the herding together of about 100 patients which in places obtained, and he thought there should be a classification according to the mental condition of the patients. In some institutions when these visits were paid there was considerable delay before the visitors from the board were admitted. At first, until he insisted, he did not see the patients in the wards in their actual every-day conditions.

Mr. Hill said he objected to puerperal patients being put into insane wards; they should rather be regarded as subjects for after-care, especially as they were usually quite harmless.

Mrs. Glanville said there were four large asylums within a three-mile radius at Epsom, and suggested that the very acute cases should all be in one building, and the other three should be set apart for cases according to their stage of recovery, the last being the institution from which they were discharged. More nurses and attendants would be available for the acute cases, and less would be needed for those requiring less attention and watchfulness, and in this way there would be economy in working.

The Question of Punishment.

Mr. Hill said he was satisfied that punishment went on in these institutions, and this would not have been known but for the efforts of the special visiting committee. He related a case of ill-treatment, which even the doctor did not know of until five days afterwards, and members of his committee were not allowed to go to the institution and interview the nurses and attendants concerned in it. On their next visitation this particular attendant was temporarily missing. An inquiry was held by the Board of Control, but at that inquiry the visitors were not allowed to be present. He believed the attendants in such a case stood by each other and would not divulge incriminating information.

Mrs. Glanville said that if Mr. Hill and she had been at the inquiry they would not have agreed with the report which was made, and they would have said it had come to their knowledge that punishment of patients was going on. It was possible to punish a patient without leaving a mark. In a case at Hanwell it was at first denied that there had been punishment inflicted by an attendant, but at the next visit the patient in question had two black eyes,

and they were told that the attendant had been dismissed.

Mr. Hill explained that the visitors did not interest themselves in the release of the patients from the institution; they recognised that was a medical matter. In another case inquired into, a great deal of a girl's hair had been pulled out of her head. He had known a man put into the acute ward by way of punishment, for it was well known that there the other patients would punish him, for they fought among themselves. The witness said he was prepared to fully substantiate the statements he was making. At the time in question the man had been in the acute ward three or four days, and the reason given for putting him there was that he had tried to escape.

Padded Rooms.—Clothing.

Mr. Hill said he considered the padded room at Cane Hill Mental Hospital was a bad one; it was too dark and there was not sufficient ventilation. In reply to questions, he said he paid his visit on a winter afternoon about 3.30 to 4 o'clock; he agreed that in such a room, for violent patients, it was necessary to have windows high, out of the patient's reach, because of possible injury by the glass. The Chairman and Lord Russell mentioned that they had both seen the room in question.

With regard to the clothing of the patients, the witnesses said that at Hanwell in the winter a number of the male patients were obviously cold and miserable, and their clothing was far from adequate. When a doctor there was spoken to about it he said that if good clothing was supplied the patients tore it off. Mrs. Glanville said the clothing at the other mental institutions visited was better than at Hanwell, and she did not know why there was that difference. Both witnesses preferred that patients should be allowed to wear their own clothing if it was suitable; any approach to a uniform was resented by sensitive patients. Mrs. Glanville said that she considered a visitation paid unannounced to a few patients in their ordinary surroundings was more valuable than a formal parade at a set notified visit. Senile cases were put into comfortable quarters by themselves, they were not with the acute cases.

THE ST. LUKE'S MENTAL CLINIC.

Evidence concerning the working of the St. Luke's Mental Clinic attached to Middlesex Hospital was tendered by Dr. R. W. Gilmour. He said St. Luke's was one of the oldest of the registered hospitals. For many years it received only certified cases of insanity. It was decided to open a clinic, with an out-patient department and a few beds for more serious cases, and Dr. Hubert Bond suggested that an effort should be made to become attached to a general hospital. Accordingly, in 1923 the clinic was established with six beds. The nursing staff was supplied by St. Luke's Hospital. Reasons for founding the clinic included the fact that many people would go more readily to the out-patient department of a general hospital than to a mental hospital on account of the name of the latter, though that chiefly applied to people who knew but little about mental hospitals. Also, the fact of going to a general hospital caused them to realise that they were ill, and this recognition helped the treatment. In most illnesses expert examinations were necessary, such as of the ear and throat, and in such a clinic this and laboratory examinations came into the usual routine. This clinic was actually under the same roof as the Middlesex Hospital. The hospital neurologist and he saw the cases in the same room, and there was intimate association between the ward for mental cases and the other wards of the hospital. He believed that by treatment at such clinics many cases were prevented from reaching the certification stage. Patients came of their own desire and expressed wish, and when they arrived they were told they must obey the rules of the hospital. If they seemed likely to give trouble he told them he was taking their word, and that was mostly effectual. If it should happen that a patient was found unsuitable for the clinic he called upon the friends to remove him; noisy patients likely to disturb the others he would not keep there. He had not yet had any cases of suicide. In answer to Sir David Drummond, he said he thought an extension of the system in a general way would be a very good thing. But such clinics should usually be in association with a mental hospital. Even without an in-patient department they would be beneficial. He got chiefly cases of neurosis and the psycho-neuroses, but, contrary to some expressed opinions, he was sure some of these cases passed into genuine psychoses. Several cases, though not certifiable when they came in, became so later. He did not have certified patients in his ward as this embargo was essential to the character of the ward, and patients were told that as long as they were there they would not be certified, and they would not be associating with such patients. Last year he had as in-patients five men and 20 women; four of the men and 14 of the women recovered. Of the remainder, three were removed by friends at his request, the others being discharged, either relieved or not improved. It was difficult to know how they bore up afterwards as he had no system of liberation on trial as had the mental hospitals. Not one of the patients passed from him straight to a mental hospital. He occasionally received into his ward cases which had developed mental trouble in the general wards of the hospital. Five female nurses composed the nursing staff of the clinic; all were mental nurses, and one or two had also had general hospital experience.

A further sitting of the Commission took place on June 22nd, when the chair was occupied by Mr. N. Micklem, K.C.

EVIDENCE FROM THE LADY CHICHESTER HOSPITAL.

Lady Chichester and Dr. Helen Boyle attended and submitted evidence concerning the establishment at Hove which bears Lady Chichester's name, and which receives and treats women and children who are suffering from early mental disorder. Dr. Boyle is the senior physician at the hospital. Established in 1905, it is claimed to be the first attempt to deal in this way with early and "border-land" cases, the only parallel effort in the kingdom at that date being Dr. Carswell's in the Poor-law wards at Glasgow. This Hove hospital has 39 beds and an out-patient department, and it is maintained purely by voluntary effort, with no large benefactions. The conditions treated there were neurasthenia, organic nerve diseases, physical disabilities, early psychoses, and psycho-neuroses. Dr. Boyle explained that by early cases she meant patients whose trouble was at the time such as did not suggest any question of certification. She was not referring to cases which had recently become certifiable. The average cost of maintenance was only £1 19*s.* 7*d.* per week per in-patient, the low figure being due to the exercise of strict economy and the fact that a number of the patients were able to take a rota of duty.

Lady Chichester said the hospital was not free of debt, but current expenses were met year by year.

Dr. Boyle said the hospital kept full and there was always a long waiting-list. There was no geographical limitation in regard to applicants; indeed, patients had been there from Nigeria, Egypt, Scotland, and from London hospitals, as the latter had no beds for this class of case. One case of attempted suicide, the woman's impulse having probably been due to long-continued monotonous work in solitude, was sent from St. Thomas's Hospital, and was treated there with very beneficial results. In three months her weight increased 2 st. 4 lb.; she had now been working for two years in Brighton and was apparently fully restored. Lady Chichester remarked that a large part of the work of the hospital was done among harassed and over-wrought mothers, also a number of widows. Dr. Boyle said the hospital did not take cases which had been treated in mental hospitals, as these were supposed to be dealt with by an after-care

association. It had, however, an out-patient department where ex-patients who felt they had some slight recurrence could come and talk over their symptoms. If a long time had intervened, cases might be readmitted as in-patients. She thought there should be some such institution at every considerable centre, and if possible, it was well to have it in association with the general hospital. When the Royal Sussex Hospital was approached with this view in 1905 the idea was too new. Laboratory investigations for the Lady Chichester Hospital was now done in the laboratory of the county hospital.

Dr. Boyle said she had visited and studied mental institutions in France, Germany, Austria, Canada, and Belgium, and everywhere the view was held that if early cases of mental disorder could be treated, many of them could thus be prevented from becoming certifiable at all. When the Hove establishment was started the Continent and America were well in advance in this matter, but to-day the disparity had been largely remedied. Her chief criticism of the continental clinics was that they took some cases which were too advanced so that they had locked doors, and this interference with the patient's liberty did much to neutralise their great distinguishing feature as compared with the asylum. She gave some instances of juvenile cases treated with an indication of the lines followed. Sometimes cases were taken in on the recommendation of their doctor, but sometimes the latter's description of the case proved to be inaccurate and misleading. Old patients were made welcome at a weekly "club night," and the witness hoped to see this social side developed much further.

Dr. Boyle was not enamoured of the idea of a provisional certificate, as the public would not be likely to regard it as very different from the ordinary one. If the mental hospitals did not receive acute recoverable cases, Dr. Boyle thought those institutions would become terrible places of despair, and good medical officers would be very unlikely to be attracted to the work in them. In a series of 23 acute cases, only three became well in three months.

Lady Chichester said that one acute case in the hospital would do a great deal of harm and would shake the belief of the public in its character. The average stay of patients in this hospital was about two months.

Dr. Boyle said she was not obsessed by psychotherapeutic measures in treatment, as many of the disorders were due to physical exhaustion and defects, and the aim was then to remedy these. If there were more such clinics people would see that there were various mentalities, and what they led to.

Asked by Sir Humphry Rolleston why cases of disseminated sclerosis were taken into this hospital, Dr. Boyle replied that she strongly favoured regarding the nervous system as a whole, and not making specialities of separate sections of it.

Dr. Boyle pleaded for greater freedom in these matters, for both doctor and patient. The doctor should be free to treat a willing patient whenever he thought it desirable or possible, and the patient should be at liberty to go for treatment where he wished or where the doctor might send him. She also favoured an unlimited number of licensed houses or private houses where patients could be treated; competition would keep up the standard of efficiency. At present it was very difficult, and a long time was necessary to effect transfer of a patient from a mental hospital he did not like to another.

THE MAUDSLEY HOSPITAL.

Dr. Edward Mapother, the medical superintendent of this institution, attended to give evidence as an individual who had had a good deal of experience of mental hospital administration. Mr. Macmillan, who now took the chair, mentioned that the Commission had recently visited the institution and inspected its research, teaching, and voluntary treatment departments. Dr. Mapother said he thought there should be a better adaptation of the legal processes to the attitude of the patient towards treatment. For instance, he would make treatment a means of avoiding certification. He also wished to see provision made for specialised types of institution which would deal in a separate way with recoverable cases and with chronic ones; also separately with patients who were objectionable and those who were quiet. He further wished to see an extension of the provisions for teaching and research. Certifiable patients included those able to coöperate in their own treatment, those who were passive in this respect, and thirdly, those who actively resisted efforts at treating them.

Clinics.—To the usefulness of clinics he thought there was a definite limit; in some cases they could not be regarded as substitutes for the mental hospital. The Maudsley did not receive certifiable patients; all who were there could have their discharge on 24 hours' notice. Three-fourths of those patients came via an out-patient department of a hospital. Some came on the recommendation of a mental specialist. More cases, though still willing and recoverable, were taken at the Maudsley Hospital than at Chichester House. Non-volitional cases should, he thought, be dealt with in clinics so long as they were not a nuisance to others. There were many recoverable cases among these.

Observation Hospitals.—Dr. Mapother thought fresh recoverable cases not suitable for clinics should receive their first attention at observation hospitals. A further reform he wished to see was that patients who had not reached the certifiable stage should be allowed to be private voluntary boarders, they being subject to similar supervision and visitation to that exercised in the case of certified patients. Contentment of patients would be arrived at if each institution had its own type of patient. At present, certainly in the gardens, refractory and quiet patients were in association. He favoured the employment of female nurses for male wards. In conclusion, he said he would like to see the accommodation at the Maudsley Hospital increased, and thought it would be a great advantage to have similar institutions in the chief centres of population.

MANCHESTER SANATORIUM FOR CONSUMPTIVES.—The Manchester Public Health Committee has received provisional sanction from the Ministry of Health to its scheme for extending the Abergele Sanatorium for Consumptives. The total cost of the scheme will be about £300,000, and it is proposed that ultimately the total number of beds will be increased to 540. It is proposed to put in hand at once an instalment to provide 210 beds at a cost of £183,768. The Ministry will make a grant of £180 per bed towards the cost, and contribute 50 per cent. towards the maintenance charges, including loan, interest, and repayment. This will be the largest sanatorium scheme undertaken in this country since the war.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The eighty-fourth annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held from Monday, July 6th, to Friday, the 10th, under the presidency of Sir Frederick Mott, at the University Buildings, Edmund-street, Birmingham. On Tuesday the 7th, at 11.30 A.M., a lantern demonstration will be given by Dr. David Orr on the Sympathetic Endocrine System, and the presidential address will be delivered by Sir Frederick Mott at 3 P.M. On Wednesday, the 8th, at 10.30 A.M., Dr. G. A. Auden will read a paper entitled Encephalitis Lethargica and its Psychological Implications, and a lantern-slide demonstration of the Lesions of Lethargic Encephalitis will be given by Sir Frederick Mott. At 7.15 for 7.30 P.M., the annual dinner of the Association will be held at the Grand Hotel, Colmore-row, Birmingham. On Thursday, the 9th, at 10.30 A.M., Dr. Graves will read a paper entitled Incidence of Chronic Sepsis in Mental Disease, and Dr. Pickworth will read a paper on the Iodine Content of Thyroid Glands. On Friday, the 10th, at 10 A.M., Dr. A. M. McCutcheon will read a paper entitled The Institutional Treatment of Mental Deficiency, with Special Reference to Occupational Training. At 11 A.M. Dr. W. A. Potts will read a paper on Delinquency, followed by Dr. Hamblin Smith on The Psychopathic Personality. A pleasant series of excursions and visits to places of interest in the neighbourhood has been arranged. The full programme may be obtained from Dr. R. Worth, hon. general secretary, Springfield Mental Hospital, Tooting, London, S.W.

Correspondence.

"Audi alteram partem."

SICKNESS AND ACCIDENT INSURANCE.

To the Editor of THE LANCET.

SIR,—From applications which have been received by the Medical Sickness, Annuity and Life Assurance Society Limited, 300, High Holborn, W.C., it appears that a number of medical men are unfortunately involved in the failure of the Profits and Income Insurance Company. The directors of the Medical Sickness Society (which was formed in 1884 by the late Mr. Ernest Hart on mutual lines solely for the medical and dental professions) have carefully considered in what way they could best assist their colleagues in their present difficulty, and are prepared to give consideration to any applications which may be made to them.

Inasmuch as the sickness premiums charged by the Profits and Income were considerably higher than those charged by this Society, policy-holders in many cases can obtain the same benefits from this Society as those for which they insured in the Profits and Income several years ago without paying increased premiums. Naturally, such applicants will now be desirous of ascertaining the financial position of any society or company in which they may desire to insure so that they may be confident that their claims will be met.

So far as the Medical Sickness Society is concerned I would, with your permission, refer them to the advertisement page in this issue of THE LANCET, from which they will see that separate funds exist for life assurance and for sickness and accident invested in sound securities properly vouched for.

Your obedient servant,

FRANCIS J. ALLAN,
Chairman, Medical Sickness, Annuity and Life Assurance Society Limited.

June 22nd, 1925.

THE PROBLEM OF MALIGNANCY.

To the Editor of THE LANCET.

SIR,—Dr. A. E. Barclay is no dreamer; he has always been a thoughtful worker and his conclusions carry weight. He is convinced (vide THE LANCET, June 20th) that in cancer there is an unknown factor, x, which he believes is a blood change—possibly biochemical. X determines the onset of local cell-overgrowth—i.e., tumour. So long as this blood change x exists, no cure is possible by operation or radiation, although in some cases local tumours may be removed by one or both means. If the blood change x clears up—as it may—then the patient can be cured provided the local cancer is removed by operation or by radiation. Clearly Dr. Barclay is right in declaring it a waste of time to look down a microscope for the cause of cancer. Search must be made for the underlying blood change (if such there be). I should like to take matters a step farther, for I believe that the x he is looking for is not altogether unknown; it is, in fact, the toxæmia of stasis. I see many cases of cancer, both for diagnosis and treatment, and I can state positively that each case, whether early or advanced, shows evidences of severe stasis. This statement might go unchallenged were it not that the conditions of our civilisation have led us so far from Nature's ways that toxic tissues are the rule, and healthy tissues the exception. Toxæmia is so general that many accept it as the normal state! But toxic tissues fall a ready prey to disease. Dr. Barclay quotes a case in which a cancerous breast has been removed and later a cancer has appeared in the other breast in the upper and outer quadrant. Stasis explains this; the breasts in stasis are nodular (chronic mastitis due to toxæmia); the nodules are most pronounced in the upper and outer quadrants. If the stasis is cured by treatment the nodules clear up; the breasts become smooth. If the stasis is allowed to go on the breasts may become cystic or cancerous; often first cystic, then cancerous. So, too, in the toxic stomach a chronic ulcer or chronic catarrh of the mucous membrane may pass over into cancer. In the toxic colon chronic catarrh of the mucous membrane with infiltration of the submucous tissue (colitis) leads to surface erosion and eventually to cancer. And so with other organs. Hence I can support Dr. Barclay in postulating a general devitalising process, but whereas he modestly names it x, I would bestow upon it the more definite and explanatory title "the toxæmia of stasis." To call it x is not helpful, whereas to call it "stasis" is immensely helpful, for it leads to efficient treatment and, I believe, goes a long way toward the prevention of cancer.

I am, Sir, yours faithfully,

ALFRED C. JORDAN.

Upper Wimpole-street, W., June 20th, 1925.

RECENT RESEARCH INTO SCARLET FEVER.

To the Editor of THE LANCET.

SIR,—The editorial article on recent research into scarlet fever in your issue of April 11th interested me greatly. The impression which many readers who are not in close touch with this new study of the serum therapy of the disease will derive from the concluding paragraph, will, I fear, discourage early treatment of serious cases. This seems unfortunate, to say the least, in view of the fact that every important laboratory in this country (U.S.A.) which has seriously undertaken the study of scarlet fever by these new methods has, in the main, confirmed the observations of the Drs. Gladys and George Dick in Chicago, and Dr. Alphonse R. Dochez in New York City, and also many of their conclusions relating to serum therapy.

The evidence of the ætiological relationship of the *Streptococcus hæmolyticus* to scarlet fever is presented at length, but the editorial treats very briefly and inadequately important observations on the treatment of the disease with serum. It is possibly not yet time to undertake with profit a discussion of the various studies that have been made on the relation of the hæmolytic streptococcus to scarlet fever. The new methods of research undoubtedly offer unusual opportunities for testing the different strains and the relationship of their toxins by toxin-antitoxin neutralisation. The work of Miss Kirkbride and Miss Wheeler in this laboratory is bringing to light certain facts the significance of which will be more apparent later. The results of the practical application of serum therapy in scarlet fever, however, cannot be ignored or dismissed briefly. The clinical reports of several independent investigators are now available, and the results uniformly indicate definite therapeutic action in the treatment of the disease during the early stages of the rash—fall in temperature, disappearance of the rash, marked improvement in the symptoms—in short, what might be termed a true crisis, suggesting very strikingly that the toxin is neutralised, as it is in the treatment of diphtheria, with antitoxin.

Blake has recently reported extremely important observations on the mechanism of the action of the serum in the course of scarlet fever infection which are confirmed by clinical experience. His point of view will afford a very sound basis for the study of the results of serum therapy as they accumulate. Moreover, his observations on streptococcus infec ion in scarlet fever, in principle, parallel the conclusions of the experimental studies of pneumococcus infection and the action of immune serum which I have reported from time to time since 1912—namely, that in pneumonia the disease is, largely a toxæmia complicated by parasitic invasion, and that the immune serum acts in a manner similar to antitoxin in diphtheria, neutralising the toxic substances. After all, the streptococci and pneumococci are so closely related that the study of their infectious processes should be very closely correlated. The longer we study the action of anti-pneumococcus serum in pneumonia and antistreptococcus serum in scarlet fever the more apparent will become the antitoxic action of these serums, the

prognosis depending upon the character of the parasitic invasion of the incitant. In pneumonia, however, the parasitic invasion takes place immediately, whereas in scarlet fever, according to Blake's observations, it is preceded by a period of toxæmia which permits of complete and immediate neutralisation by the introduction of the serum. Such treatment may serve to prevent subsequent parasitic invasion and the development of septic complications which, once established, may not yield so readily to serum treatment. It is obviously of the utmost importance in the treatment of the disease that the anti-streptococcus serums which are now being distributed by a number of laboratories should possess the highest degree of potency.

"Scarlet fever streptococcus antitoxin" is listed among the new and non-official remedies in the *Journal of the American Medical Association*, May 2nd, 1925. Two different serums are described: one prepared by immunisation with the soluble toxin or filtrates of the hæmolytic streptococcus—standard of potency "each c.cm. neutralises at least 1000 skin test doses of scarlet fever toxin"; the other, by immunisation with living streptococci developing in the tissues—standard of potency "each c.cm. neutralises at least 10,000 skin test doses of scarlet fever toxin."

In the light of our present knowledge, there is no evidence that the serums differ materially in their action, which is similar to that of antitoxin. However, the potency of the serum in neutralising the skin test doses is of the utmost importance. During the past year we have been able to obtain serum of the highest potency by the method of Dochez.

I am, Sir, yours faithfully,

A. WADSWORTH,
Director, Department of Health,
June 8th, 1925. Albany, N.Y.

THE PENSIONABLE AGE.

To the Editor of THE LANCET.

SIR,—In the annotation upon the pensionable age in your issue of May 30th last it is pointed out that heavy manual labour tends to shorten life, especially if indulged in after the age of 40. Raymond Pearl's opinion is quoted that all living organisms are like machines that can only transform a definite amount of energy and then die. As you put it, "the duration of life of an animal stands in inverse relation to the total amount of its metabolic activity." On reference to Dr. Pearl's book on the "Biology of Death" one finds that he quotes Prof. Max Rubner's view that all living organisms can only transform a limited amount of energy and that this is about the same for all and amounts to a mean of 191,600 calories per kilo. of body-weight.

According to this view a man comes into the world with a definite store of potential energy and when this is spent he goes out again, unless, indeed, death comes earlier from some intercurrent cause. This is an interesting theory and may be true, but surely there is another side to the question. One can imagine an elderly hypochrondriac calculating the total potential energy that heredity has bestowed upon him and coming to the conclusion that he must husband the little that he has left and hence must keep still and thus save what remains, like the poor miser with only a few coins left in his stocking. Thus being deprived of the exercise that in so many ways will help the proper functioning of his organs he may die sooner than he need, not because his energy is exhausted, but from some toxæmia or intercurrent infection, which gentle exercise might have averted.

Everyone will admit that hard physical exertion is bad for a man after middle life and will probably hasten his end, usually by damage to the circulatory apparatus, but on the other hand want of exercise also has a sting in its tail. One would like to see the powerful influence of THE LANCET urging the value of gentle exercise as well as warning against the dangers of hard physical exertion in people of mature years.

I am, Sir, yours faithfully,

Toronto, Canada, June 11th, 1925. R. D. RUDOLF.

THE PERIODICITY OF CHOLERA.

To the Editor of THE LANCET.

SIR,—Sanitary work in India is of so variable and urgent a character that ordinarily it is impossible for those responsible for its administration to spare time to acquaint themselves with schemes and themes of their predecessors; if they deal effectively with the present and immediate future they well fulfil their duty. Major A. J. H. Russell, I.M.S., in his paper on the above subject in your issue of June 13th, has proved himself no exception to this dictum. He has found that "very little information of value has been recorded in connexion with the epidemiological features of cholera." Hence, he proceeded to examine statistics for a period of 25 years of cholera deaths in the Madras Presidency applied to "groups of districts according to the periods in which these districts were affected by the different monsoons." This was the method employed by one of his predecessors in office in 1894, and formed the subject of a paper[1] read before the first Indian Medical Congress. This was illustrated by a diagram founded on the figures of a decade; it inhibited monthly periodicity so markedly as, in after years, to justify it being termed the "Madras Cholera Clock." In the paper certain deductions were offered as to the various factors concerned. These are not unreasonable when considered in the light of more recent work showing the variability of the cholera microbe, the existence of carriers, and the epidemiological data recorded by such authorities as D. D. Cunningham, Cornish, Greig, Aldo Castellani, Simpson, Tamezo Kebeshima, Paul Clements, Salvador Rosario, Trenkmann, and Pettenkoffer (vide Sanitation No., Tropical Diseases Bulletin, 1919, vol. xiv., No. 1, pp. 13–17).

In pursuing this method of inquiry, Major Russell claims he has discovered a six-yearly periodicity in the Madras Presidency, and thus has been enabled to prevent "waste of effort in unnecessary directions at unnecessary times." He further notifies his intention of verifying this possibility in the rest of India. For differentiating the numerous factors concerned throughout so vast an area, he has set before himself no mean task, and epidemiologists will wish him all success; but, so far as the Madras Presidency is concerned, I suggest he has already at his disposal information of the nature he desires in the "Madras Cholera Clock." At p. 14 of the bulletin above referred to, he will find the writer of the note on the subjects states, "later observations showed him that if cholera were introduced into a district in other than the period following its chief monsoon, it would fizzle out"; in other words, suppression can confidently be hoped for by less effort than under the opposite condition. I am, Sir, yours faithfully,

W. G. KING,
Hendon, N.W., June 22nd, 1925. Colonel, I.M.S. (Ret.).

SALINE DRINK IN INDUSTRIAL FATIGUE.

To the Editor of THE LANCET.

SIR,—The question of fatigue in industry, especially amongst those engaged in heavy and laborious work carried on in a high atmospheric temperature—e.g., stokers and foundry-men, &c.—is important from several points of view. Health, efficiency, and output are essential factors, both from the worker's as well as the employer's standpoint, and various methods have been devised to overcome the factor of fatigue. Ventilation, humidity, rest intervals, and motion study have been carefully studied by progressive firms, so as to eliminate, so far as possible, losses in labour efficiency, an important factor in industry. Whatever the actual cause of fatigue may be, whether it be due to the formation of lactic acid and carbon dioxide, which rapidly accumulates in the muscles, and later in the blood-stream, or whether this condition may be contributed to by the exhaustion

[1] The Seasonal Prevalence of Cholera in the Madras Presidency Embodied in the Transactions of the First Indian Medical Congress, 1894.

of one or more of the endocrine glands, or both causes combined, the fact remains that its effect upon individual workers is very marked, resulting maybe in cramp of the abdomen and exhaustion. This condition naturally increases the sick-rate amongst the personnel.

As the result of an experiment made some few months ago, which proved very successful, I introduced a "saline drink" for the stokers employed in the retort houses of the various stations of the South Metropolitan Gas Company. The composition of this drink is as follows: 120 g. potassium chloride, 180 g. sodium chloride per litre of water; 2·5 litres of this stock solution added to 213·3 litres (47 gallons) of water. The result has impressed me as well as the engineers in charge. Since this drink has been introduced, cramp has been eliminated and a greater sense of well-being at the end of each shift has been obtained. The great majority of the men will have no other drink. Incidentally, the sick-rate has been reduced. "Salt" is used in the tropics as a drink, no doubt for much the same reason, but I am not aware whether the combination with chloride of potassium has been employed. The effect of this drink appears to me to be due to the correction of the saline content of the blood which must be lowered by profuse perspiration, and if the worker drinks water only it must be lowered still further, thereby increasing fatigue.

I am, Sir, yours faithfully,

ROBERT J. W. OSWALD, O.B.E.,
Lieut.-Colonel, R.A.M.C. T.A. (R.); Chief Medical Officer, South Metropolitan Gas Co.

June 16th, 1925.

CURIOUS OBSERVATIONS ON THE TEETH.

To the Editor of THE LANCET.

SIR,—It seems only fair that I should write to thank you for the annotation on the reprint of Charles Allen's "Curious Observations on the Teeth," which appeared in your issue of April 11th. This notice attracted the attention of a member of the Royal Society of Medicine, who had a copy of the original book, dated 1687, which had been in the possession of his family for many years; he offered the book for sale and it has been acquired for the library of the British Dental Association. Librarians must frequently owe the acquisition of rare books to such notices as yours, and they act as reminders to those who possess these books and may have forgotten them or not have appreciated their scarcity and value. Our library is indeed indebted to you.

I am, Sir, yours faithfully,

LILIAN LINDSAY,
Hon. Librarian, British Dental Association.

Russell-square, London, W.C., June 16th, 1925.

INTERNATIONAL ASSOCIATION OF TEACHERS OF MEDICAL RADIOLOGY.

To the Editor of THE LANCET.

SIR,—As one looks round on the development of medicine throughout the world during the war, a number of surprising results may be noted. Specially striking is the development of the young science of radiology, whose second period of growth occurred when scientific thought was severely limited by frontiers. The roads along which this science advanced often diverged very widely. The most mutually contradictory opinions and measures were adopted and it is easy to understand how the desire grew up among radiologists first to know how far their science had advanced in other countries, and then to institute an exchange of experience and opinion on questions of research and instruction.

An international association of university lecturers in radiology, each specialising in some aspect of the work, seemed advisable. Such a proposal was made by a Vienna committee of lecturers and has found growing favour. Circulars were sent out, and the replies received up to the present from some 61 university lecturers in radiology have furnished valuable information. The 61 lecturers have formed a preliminary association, the several specialties of radiology being represented among them as follows: 11 are professors-in-ordinary of medical rontgenology, 6 are professors-in-ordinary of medical rontgenology, electrotherapy, and physiotherapy respectively, 12 are professors-extraordinary of medical rontgenology, 3 are professors-extraordinary of medical rontgenology, clinical medicine, and surgery respectively, 17 are associates of medical rontgenology, 2 are associates of medical rontgenology and clinical medicine or surgery, 3 are associates of rontgenology and radium science, 6 are associates of medical rontgenology and electrotherapy, also physiotherapy, and 1 is a reader in medical rontgenology.

University instruction has advanced on differing lines as the following table shows (it refers to those countries only from which we have been able to acquire detailed facts):—

Countries.	I. Number of university lecturers of (pure) medical radiology only.	II. Number of medical faculties or medical schools.	III. Relative proportions of I. to II.
Germany	5	23	0·2 (5 : 23)
Yugoslavia	1	2	0·5 (1 : 2)
Austria	12	3	4·0 (12 : 3)
Rumania	1	3	0·3 (1 : 3)
Russia	12	12	1·0 (12 : 12)
Switzerland	2	3	1·7 (2 : 3)
Czecho-Slovakia	4	3	1·3 (4 : 3)
Hungary	2	4	0·5 (2 : 4)

Italy, the United States of America, and other countries show very high indices, but the Association has not yet obtained full reports. The differences in the general appreciation of the radiology branch are not so marked—as with us its value has been recognised everywhere in a manner far exceeding early expectations.

Teachers of radiology who have not yet been reached by our circular or have not yet been induced to join our Association, are invited herewith to collaborate. The Association will also contain numerous consultative members.

The Association hopes to do useful work by publishing detailed information (list of members, &c.) in the *Fortschritte auf dem Gebiete der Röntgenstrahlen* and in the X ray archives of all languages. One of the objects of the Association is to promote coöperation among workers in radiology in all countries.

We are, Sir, yours faithfully,

HAUDEK,
KIENBÖCK,
HOLZKNECHT,
WEBER.
Executive Committee of the Association.

Langegasse 63 (parterre), Vienna VIII.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JUNE 13TH, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely:—Small-pox, 97; scarlet fever, 1400; diphtheria, 773; enteric fever, 48; pneumonia, 829; puerperal fever, 44; cerebro-spinal fever, 6; acute poliomyelitis, 4; encephalitis lethargica, 59; trench fever, 1; dysentery, 4; ophthalmia neonatorum, 121. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases showed a decrease of 2 from the number for the preceding week. One case of small-pox was notified from the County of London (Bethnal Green).

Deaths.—In the aggregate of great towns, including London, there were 4 deaths from enteric fever, 61 from measles, 13 from scarlet fever, 78 from whooping-cough, 27 from diphtheria, and 36 from influenza. In London itself the deaths from influenza numbered 3, from whooping-cough 22, and from diphtheria 9.

Obituary.

ROBERT HENRY SCANES SPICER, M.D. LOND.,

CONSULTING SURGEON TO THE THROAT DEPARTMENT, ST. MARY'S HOSPITAL.

WE regret to announce the death of Dr. Scanes Spicer, which occurred on Thursday last, June 18th, at Graham-street, Chelsea, after prolonged illness.

Robert Henry Scanes Spicer was the son of an identically named father, also a physician, who practised at North Molton, Devonshire. He was born at North Molton in 1857 and received his medical education at St. Mary's Hospital, where he gained the first open science scholarship in 1877, and the scholarship in anatomy in 1881. At the University of London he graduated B.Sc. in 1877 with honours, and qualified in medicine in 1883 with honours in medicine, forensic medicine, and chemistry. He also obtained the gold medal in botany at the Society of Apothecaries. He served the usual resident appointments at St. Mary's Hospital, extended his studies in Vienna, and proceeded to the M.D. Lond. in 1885, at which date he was resident superintendent of the Fulham Infirmary. In 1888 he was appointed surgeon in charge of the throat department at St. Mary's Hospital, and lecturer on diseases of the throat and nose. These appointments he held for 20 years, when he was appointed consulting surgeon to the department.

Apart from this intimate association with St. Mary's Hospital, Dr. Scanes Spicer held many public appointments in connexion with his specialty. He was consulting surgeon to the Throat, Nose, and Ear School for the Blind at Leatherhead, honorary physician to the Royal Society of Musicians, and a Fellow of the French Société de Laryngologie. He was a vice-president of the old Laryngological Society, having been one of the original founders and the first honorary secretary. At the British Medical Association he was president of the Section for Nose, Throat, and Ear Disease in 1900.

He was a prolific author, contributing many articles upon his specialty to our own columns and those of the *British Medical Journal*, to the Transactions of the Clinical and Odontological Societies, and to the Proceedings of the Royal Society of Medicine. For the most part his papers were strictly confined to the surgery and pathology of the nose and throat. He was an early observer of the far-reaching consequences of post-nasal adenoids,and made practical communications on the surgery of the obstruction of the nose, on the treatment of chronic disease of the antrum, and the nasal relations of asthma. A large portion of his literary work was devoted to inquiry into the ætiological factors of malignant disease of the throat, and he made useful observations on the sites of origin in these growths, on their ætiological factors, and their treatment. He was also the originator of some ingenious theories as to the mechanics of respiration. An interesting paper on this subject, in relation to malignant disease, was published in THE LANCET in 1910, in which he described the topographical anatomy and the rigid resistances of the larynx and adjacent parts, as he considered them to bear on the sites of initiation and maximum development of cancer of the larynx. Dr. Scanes Spicer had retired from practice when the war broke out, but returned to work and served for four years under the Ministry of Pensions. A serious breakdown in health led to his retirement, and for the last five years of his life he was a complete invalid.

Dr. Scanes Spicer married Mary Wilhelmina, daughter of Mr. E. H. Huelin, by whom he had two sons and one daughter. Mrs. Spicer, who survives him, was her husband's devoted companion during a long and distressing illness, and we desire to record our sympathy with her and her family.

EDMOND JOSEPH McWEENEY, M.D. DUB., F.R.C.P. IREL.,

PROFESSOR OF PATHOLOGY AND BACTERIOLOGY, UNIVERSITY COLLEGE, DUBLIN, NATIONAL UNIVERSITY OF IRELAND.

THE death occurred on June 20th of Prof. E. J. McWeeney, of Dublin. He suffered from a progressive nervous disease for several years past and death was not unexpected. A native of Dublin, Edmond McWeeney was educated at the Catholic University School in that city, and in the Collège de St. Bertin at St. Omer. He had a brilliant course in Arts in the Royal University of Ireland, ending with the university studentship in modern languages, which he won at the age of 21. Thereafter he could devote his full time to medicine, and he passed the final examinations with honours in 1887. He subsequently studied pathology in both Vienna and Berlin. In 1891 he was appointed professor of pathology and bacteriology in the Catholic University School of Medicine, and in 1908, when that school became the School of University College, he continued as professor and head of the department. He was also bacteriologist to the Local Government Board and pathologist to many of the city hospitals. He was elected a Fellow of the Royal College of Physicians of Ireland in 1905. Though the work entailed by his various offices would have fully occupied the time of a less energetic man, McWeeney found leisure to give to research. He kept in touch with work done in British and Continental laboratories, and with little assistance, and for many years with inadequate equipment, he performed an enormous amount of work and published frequently in the scientific journals. His class teaching was lucid and thorough, and his demonstrations to the Royal Academy of Medicine were perfect in their arrangement and clearness. Personally, he was a man of wide general culture, well read, much interested in botany as well as in his own subjects, and in his younger days a great walker. Seven or eight years ago, while in the full vigour of work, his health failed, and although he continued to perform some of the duties of his chair he was cut off from most of his activities. His eldest son, who had a distinguished career in the Air Force during the war, is now a member of the medical profession.

THE LATE DR. A. W. S. SMYTHE.—Arthur William Stafford Smythe, L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., died at Oxton, Birkenhead, on May 31st, at the age of 57. After studying in Dublin Mr. Smythe qualified L.R.C.P. & S. Edin. and L.R.F.P.S. Glasg. in 1891. Mr. Smythe was formerly medical officer on the West African medical staff in Southern Nigeria, and at the time of his death was in practice in Birkenhead, where he had resided for many years.

THE LATE DR. J. F. CARRUTHERS.—John Ferguson Carruthers, M.D. Edin., who died recently in his 67th year at Liphook, Hants, where he had lived in retirement for a few years, was the eldest son of Mr. Walter Carruthers, of Inverness, and a grandson of Robert Carruthers, LL.D. At 14 years of age he won a scholarship at Fettes College, Edinburgh. He was successful both in his work and in his games, winning prizes in sport at Fettes, and becoming a good cricketer. After an adventurous period in many parts of the world, he qualified M.B., C.M. at Edinburgh University in 1892 and gained the M.D. Edin. with honours in 1897. He practised for several years at Revelstoke in British Columbia, where he was medical officer of health. From 1903–5 he studied at Moorfields Eye Hospital, and then took up ophthalmic practice at St. Peter Port, Guernsey. Soon after the outbreak of the war he was appointed ophthalmic specialist at the Royal Herbert Hospital, Woolwich, where he remained till 1922. His duties in this post were extremely arduous, and it cannot be doubted that his unremitting work undermined his health. In 1922 he was appointed ophthalmic specialist at Bagdad in the R.A.F., with the rank of squadron-leader, but did not take up the post, and shortly afterwards retired. He married a daughter of Mr. W. Scott, of Edinburgh, who survives him.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—As the result of the First Professional Examination for the Fellowship, held from June 9th to 18th, for which 115 candidates presented themselves, 40 candidates were approved and 75 were rejected. The following are the names and medical schools of the successful candidates:—

W. E. Barnie-Adshead, Birmingham; W. J. H. M. Beattie, Cambridge and St. Bart.'s; B. B. Burns, Cambridge and St. George's; R. W. Butler, Cambridge and St. Thomas's; T. L. Cleave, Bristol; F. M. Collins, Cambridge and King's Coll.; A. D. W. Cooke, St. Mary's; D. W. Currie, Leeds; D. A. Davies, Cardiff and St. Thomas's; C. S. Dickson, Toronto and Middlesex; A. A. Digges La Touche, Cambridge and Leeds; J. Foster, London; P. J. Ganner, Birmingham; A. G. Harsant, London; C. H. Hembrow, Melbourne and Middlesex; H. Jackson, Middlesex; J. H. F. Jayasuriya, Ceylon and Middlesex; B. L. Jeaffreson, St. Bart.'s and St. Mary's; Phyllis I. Kaufmann, Manchester and St. Mary's; P. Kiely, Cork; R. A. King, St. Mary's; Winifred A. Ladds, London School of Medicine for Women; P. Malpas, Liverpool; J. N. Milloy, Glasgow and London; F. J. Milward, Cambridge, St. Thomas's, and St. Mary's; A. M. A. Moore, London; E. G. Muir, Middlesex; J. R. Peacock, Cambridge and St. Mary's; G. G. Penman, Cambridge and St. Thomas's; F. W. M. Pratt, Durham and St. Mary's; L. N. Pyrah, Leeds; M. P. Reddington, Otago and Middlesex; O. W. Roberts, King's Coll.; I. G. Sacks, Dublin and Middlesex; J. N. Sankey, Birmingham; H. Schneidin, Middlesex; C. H. C. Searby, Melbourne; J. E. Sykes, Liverpool; Fanny M. Whittaker, St. Mary's and Charing Cross; and H. S. T. Young, Cambridge and St. Mary's.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the undermentioned subjects:—

Surgery.—C. E. Hagenbach, St. George's Hospital; E. J. Jones, Middlesex Hospital; F. G. Martin, Charing Cross Hospital; R. D. Mason, St. Mary's Hospital; G. H. Weeber, Glasgow and Middlesex Hospital; and J. W. Whitney, London Hospital.

Medicine.—I. H. Mackay, Sydney and London Hospital; C. J. Rozario, St. Thomas's Hospital; H. Winstanley, Liverpool; and H. J. F. Wood, Guy's Hospital.

Forensic Medicine.—T. H. Harrison, Sheffield; E. W. D. Long, London; C. 3. Netscher, St. Mary's Hospital; and J. I. N. O'Sullivan, Dublin.

Midwifery.—T. H. Harrison, Sheffield; A. H. Henson, Charing Cross Hospital; and N. H. Ibrahim, Durham.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: I. H. Mackay, C. J. Rozario, and H. Winstanley.

INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA.—The visit of the Assembly to this country terminated on June 21st, when the delegates left for Paris. We referred briefly last week to the visit paid to Belfast, where the Assembly were entertained in two detachments on June 11th and 12th respectively. Our Belfast correspondent sends us the following additional details. "A complimentary dinner to some of the leading delegates was held in the Medical Institute, Belfast, on the evening of June 13th. The chair was occupied by Dr. R. W. Livingstone, Vice-Chancellor of the University, and amongst the visitors present were Dr. Charles H. Mayo, President of the Assembly; Dr. W. B. Peck, Organising Secretary; and Dr. Woods Hutchinson. The toast of The Visitors was proposed by the chairman and supported by Prof. Andrew Fullerton, Mr. A. B. Mitchell, and Dr. Alexander Dempsey. Dr. Mayo, Dr. Peck, and Dr. Woods Hutchinson suitably replied. In the course of the evening Dr. Mayo conferred the honorary membership of the Assembly upon Prof. Fullerton and Dr. Robert Marshall, who have borne the chief burden of the preparations for the reception of the American and Canadian visitors. Advantage was taken of the fine summer weather to explore some of the beauties of Northern Ireland, a party of 300 visiting the Giant's Causeway. The visit has left behind the happiest memories and will be long remembered with pleasure by all concerned. The intimate connexion of Northern Ireland with America and Canada was emphasised in many of the speeches made, and the existing ties have been cemented by the friendly and cordial intercourse of the last few days."

Glasgow.—On Monday, June 15th, the Assembly arrived in Glasgow from Ireland. A full and varied programme of lectures, clinics, and demonstrations had been prepared at the various infirmaries and hospitals of the city by the Glasgow Post-Graduate Medical Association, and these were well attended. On Tuesday the visitors were the guests of the University at a conversazione in the Bute Hall, where Sir Donald MacAlister, the Principal, accompanied by Lady MacAlister, formally welcomed the gathering. In the course of a short and witty address, he said: "In the name of my colleagues of this ancient medical school, one of the largest in the country, and in all modesty not the least famous, I bid you welcome to Scottish soil and Scottish hearts. In the name, too, of the General Council of Medical Education and Registration of the United Kingdom, of which for 20 years and more I have been President, I assure you of the hearty and brotherly welcome of the profession at large. A Latin poet speaks of the healer as *Opifer per orbem*, 'Helper the world over.' To-day the physician is more than ever hailed as a helpful fellow-citizen wherever he goes. For the time being we receive you as freemen of our ancient University. I call it ancient because it is older than Christopher Columbus, *just* older. There was still a Roman Emperor on the throne of Byzantium when it was founded. Our Faculty of Physicians and Surgeons was chartered before Lord de la Warr settled Virginia, or Champlain settled Quebec. So you see the United States and Canada are comparatively modern from our point of view. With all the reverence due to youth, we venerable seniors greet you and give you our blessing." Referring to Dr. Mayo, he said: "Dr. Mayo, I was unable to share as I would in the great and friendly reception which was offered you in London, both as the leader of this new crusade of Knights-Hospitallers and for your own and your brother's sake. I am proud and happy to receive you now in Glasgow, and to offer you the right hand of fellowship, fellowship international, fellowship professional, and fellowship of spirit and purpose. The motto of the Mayos is *E cruce salus*; may your eastern crusade make for the health of the nations and the healing of their wounds." Dr. Mayo replied on behalf of the visitors, and in acknowledgment of the hospitality he bestowed on Principal MacAlister, Prof. Archibald Young, and Dr. James Carslaw, secretary of the Glasgow Post-Graduate Association, honorary membership of the American Assembly. Wednesday the 18th was spent in an excursion to Loch Lomond and the Trossachs, and in the evening the visitors were the guests of the corporation at a dinner in the City Chambers, when Mr. Montgomery, the Lord Provost, gave an address of welcome.

Edinburgh.—The visit to Edinburgh extended from Thursday, June 18th, to Saturday, the 20th. The time allowed was limited, in fact far too short for anything in the nature of systematic study of the medical schools, but great credit is due to Dr. J. D. Comrie for the intensive programme arranged by him both in the varied series of clinics and the social receptions and sight-seeing arrangements. The programme was opened by a reception in the McEwan Hall, followed by a graduation ceremony at which the honorary degree of Doctor of Laws was conferred upon Dr. Charles H. Mayo. Sir Alfred Ewing, Vice-Chancellor of the University, opened the proceedings by welcoming the visitors. Edinburgh, he said, was the nursery of medicine, and for that reason he wished them particularly to feel at home. Their visit was mainly, he imagined, to meet the teachers face to face and to profit by the electrical stimulus that came from contact not only with the methods but with the men. Following the graduation ceremony, activities were immediately transferred to the various medical departments and especially the Royal Infirmary, where a number of clinics were arranged for the two hours of the morning that remained; ten were given on the medical side and nine on the surgical, while separate arrangements were made for those interested in diseases of the eye, ear, nose, and throat. After an interval for lunch three demonstrations were held in theatres at which a series of physicians and surgeons presented cases and methods, amongst others, cases of fibromatosis of the stomach, plastic repair of face and limbs, while therapeutic problems were discussed by Prof. Gulland, Prof. Murray Lyon and others. In the evening the Lord Provost, magistrates, and council of the city held a reception in the Royal Botanic Garden, during which a lecture was given by Mr. R. M. Adam on life in the outer isles of the West of Scotland. On the following day, Friday, the 19th, a pathological demonstration was held in which the departments of surgery, midwifery, pathology, bacteriology, and diseases of the skin combined their exhibits to form an extensive collection of all departments of medicine, while early in the day a lecture was given by Mr. J. W. Dowden upon early active movement in fractures of the upper extremity. During the morning a number of cliniques and demonstrations were given as on the preceding day, at the Royal Hospital for Sick Children, the Royal Simson Maternity Hospital, and other institutions. In the afternoon a further series of theatre demonstrations was held. Later in the day the visitors had an opportunity for sight-seeing, and inspected the State apartments of Holyrood Palace, which had been opened by special permission. The visitors left for Newcastle on Friday night and Saturday morning after their flying visit. The opinion expressed by Dr. G. H. Beck, of Baltimore, as to the work in Edinburgh seems to be the general impression of the party. Dr. Beck spoke of the thoroughness of the Edinburgh surgeons and doctors

and commented favourably on the type of practitioner in Edinburgh. He said that there was no undue haste on the part of doctors in the city to adopt novel methods, unless these had been proved to be of value.

Newcastle.—On Saturday, June 20th, some 85 members of the Assembly visited Newcastle and inspected the principal hospitals. The guests were welcomed at the Royal Victoria Infirmary by Lord Armstrong (chairman of the house committee), Sir Thomas Oliver, Dr. Thomas Beattie, Dr. A. M. Martin (chairman of the hon. medical and surgical staff), and Dr. R. A. Bolam Surgical operations were then witnessed, and the various departments were inspected, followed by a visit to the College of Medicine and the War Pensions Hospital. A civic luncheon was held in the Grand Assembly Rooms, where the guests were received by the Lord Mayor and the Sheriff. Dr. Mayo, replying to the toast of "Our Distinguished Guests," proposed by the Lord Mayor, said that in recognition of the beneficent work carried out by the Royal Victoria Infirmary, it had been resolved to make Lord Armstrong, Prof. Rutherford Morison, Dr. Beattie, Dr. Martin, and Mr. G. Grey Turner honorary members of the Inter-State Post-Graduate Assembly of America.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual general meeting of this society will be held at 5 o'clock on Friday, July 10th, at the West London Hospital, W. 14.

SOCIETY FOR THE STUDY OF INEBRIETY.—A meeting of this society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W., on Tuesday, July 14th, at 4 P.M., when Dr. C. W. Saleeby will open a discussion on Sunlight and Alcohol.

TUBERCULOSIS SOCIETY.—The annual meeting of this society will be held on Tuesday, July 7th, at Pritchard's Restaurant, 79, Oxford-street, London, W. The meeting will be preceded by a dinner at 5*s.* 6*d.* per head, and it is hoped that as many members as possible will attend. It is requested that those intending to be present should notify the Hon. Secretary, 138, Herbert-road, Woolwich, S.E. 18, as early as possible.

EPSOM COLLEGE.—The Council of Epsom College will shortly elect two girls to St. Anne's Home Scholarships of £48 a year. Candidates must be fully 7 years of age and not over 12, and must be necessitous orphan daughters of medical men who have been for not less than five years in independent practice in England or Wales. Application must be made on a form to be obtained from the Secretary, 49, Bedford-square, W.C. 1, by July 7th.

POWELL *v.* MAYBURY.—The hearing of an action brought against Dr. Lysander Maybury, senr., of Southsea, by Mr. Percy John Powell, for alleged improper medical treatment and negligence, was concluded at the Hampshire Assizes on Saturday before Mr. Justice Shearman and a special jury. The jury awarded the plaintiff £1000 damages. We understand that an appeal has been lodged.

THE ROYAL WEST SUSSEX HOSPITAL.—Lord Woolavington, of Lavington Park, Sussex, has, in response to a letter from the secretary of this institution pointing out the urgent need of funds, forwarded a cheque for £1000. At the annual meeting of the governors in April a deficit of £1624 was reported on the year's working.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held at St. John's Hospital, London, on June 17th, when the annual oration of the society was delivered by Prof. Dubreuilh (Bordeaux) on Chronic Sunburn and Epithelioma of the Skin. (An abstract of this address appears on p. 1355 of this issue.) A vote of thanks to the orator was proposed by Dr. Knowsley Sibley and supported by Dr. J. L. Bunch and Dr. Prosser White. Prof. Dubreuilh replied. The annual general meeting was then held, when the following officers were elected for the ensuing session: Patron: The Earl of Chesterfield, K.G. President: Dr. William Griffith. Council: Ex officio, members of the staff of St. John's Hospital—Dr. W. Griffith, Dr. Knowsley Sibley, Dr. W. Fox, Dr. H. MacCormac, Dr. S. E. Dore, Dr. J. M. H. MacLeod, Dr. A. C. Roxburgh; and past-presidents of the society: Dr. A. T. Bremner, Dr. J. L. Bunch, and Dr. Prosser White; together with Dr. Knyvett Gordon, Dr. S. R. Kapoor, Dr. R. H. Rattray, Dr. R. H. Scovell, and Dr. D. Vinrace. Hon. Treasurer: Dr. Knowsley Sibley. Secretary: Miss M. Atkinson. Pathological Sub-committee: Dr. Griffith, Dr. Knyvett Gordon, and Dr. R. F. Fagan. The annual dinner of the society was held the same evening at the Trocadero Restaurant, Prof. Dubreuilh being the guest of the evening.

SUNLIGHT CLINIC FOR HULL CHILDREN.—In April, 1924, Hull established the first municipal clinic for the treatment of rickety children by artificial sunlight, and so great has been its success that it is to be greatly enlarged. At present only 20 children can be treated at once, and there is, naturally, a long waiting list.

ENLARGEMENT OF ST. CROSS HOSPITAL, RUGBY.—Mrs. Arthur James, the president of this hospital, has undertaken the cost of enlarging it in memory of her late husband. St. Cross is a 100-bed hospital which has been doing the work of a much larger institution, and its resources will now be increased to from 125 to 130 beds. It is an approved hospital for the treatment of non-pulmonary tuberculosis and of venereal diseases.

BERLIN: INTERNATIONAL POST-GRADUATE COURSES. The following post-graduate courses, organised by the Faculty of Medicine of Berlin University, will be held in Berlin in October: (1) Special courses on all branches of medicine dealing especially with those subjects that are of present interest to the profession as a whole. These courses include practical work. (2) A series of lectures on internal medicine, with special reference to diagnosis and therapy in general practice. (3) Systematic review of the progress of medical science and technique. (4) Post-graduate course for oculists. Further details and a full programme of the courses may be obtained from the offices of the International Post-Graduate Courses, Kaiserin Friedrich-Haus für das ärztliche Fortbildungswesen, Luisen-platz 2–4, Berlin, N.W. 6.

MEDICAL GOLFING SOCIETY.—The annual summer meeting was held at Moor Park on June 11th. Over 90 members took part in a most successful tournament. The results were as follows, all the competitions being against bogey:—THE LANCET Challenge Cup (scratch): H. D. Gillies, 3 up. Henry Morris Challenge Cup (handicap): J. O'Malley (6), all square. Milsom Rees Challenge Cup (scratch return in second class): H. P. Aubrey, 5 down. Class I.:—First prize, L. E. Barrington-Ward (9), all square. Second prize: L. Forest (8), L. Welply (8), G. Norman (10), A. H. Vassie (11), and J. Grace (7), tied at 1 down. Class II.:—First prize: G. F. Wilson (14), all square. Second prize: C. V. Mackay (11), 1 down. Best last nine holes: W. A. Rogerson (12), 1 down. Foursomes: G. P. Kennedy (8) and L. Welply tied with Arthur Evans (8) and S. G. Bonnalie (5).

LIVINGSTONE COLLEGE COMMEMORATION DAY.—On June 10th Commemoration Day was held at Livingstone College, Leyton, London, E., Dr. Andrew Balfour in the chair. Dr. Tom Jays, the Principal, made a short statement as to the financial position of the College, showing that about £800 was needed in order to close the current financial year without a deficit. He showed that the need was for more students, as owing to the lessened numbers entering since the war, and also to much extra necessary expenditure, the financial burden was heavy. He spoke of the world-wide influence of Livingstone College, the students of which were now scattered in almost every part of the globe. Dr. Balfour said that what had impressed him extremely in his knowledge of the work of Livingstone College was the way in which the students were trained in persistency in their studies and work. "Persistence," he said, "is a great matter; it is needed as much in missionary labours as in medical work. In the mission field there is often great discouragement at the small signs of progress." He pointed out that in addition to learning something of medicine and surgery, the students also learned preventive work in hygiene as applied to tropical disease. "There is," he said, "a vast deal of common-sense in public work, and much can be done by following certain rules. It is a saner plan to keep folk well than to cure them when they have fallen ill, beside a saving of a vast amount of money." The Rev. H. Wakefield, a student of the Primitive Methodist Mission, Calabar, West Africa, said he had often wondered what would happen if old Livingstonians all the world over were to send their testimonies of what Livingstone College had done for them. It would not be a story of increased salaries, of promotion to the heads of departments, but a story of gigantic struggles against disease and squalor. It would be a great human document of combating death, of alleviating pain, of fighting with customs against disease, against those forces which make men miserable and unhappy. Mr. F. Kilbey, of the Friends' Foreign Mission, Central Provinces, India, a student of the first session, told of his 30 years' work in the field, and of the work he had been enabled to do through the knowledge he had gained. "I would advise every man and woman," he said, "who contemplates residence in India, to take such a course as Livingstone College offers, and I feel sure that anyone who avails himself of it will be able to give like

assistance to the people as I have been able to give." Among those present were Sir George Makins, Dr. P. Manson-Bahr, Dr. Whitfield Guinness, Dr. J. H. Cook, Mrs. Batchelor Russell, and Miss Rachael Barclay.

DUDLEY GUEST HOSPITAL.—About £15,000 has been obtained by a bazaar and a direct appeal to clear off the debt on this hospital of 115 beds. The remarkable sum of £1164 was taken at the doors.

TUBERCULOSIS SOCIETY OF SCOTLAND.—A meeting of this society will be held at the British Medical Association, "Scottish House," 6, Drumsheugh-gardens, Edinburgh, on Thursday, July 9th, at 4.30 P.M., when Prof. Holger Möllgaard and Prof. Knud Faber, Copenhagen, will give a lecture on the Sanocrysin (Gold) Treatment of Tuberculosis.

CIVIL SERVICE NURSING HOMES.—A committee has been appointed by the National Whitley Council to investigate the possibility of setting up nursing homes to provide medical and surgical treatment for members of the Civil Service. It is proposed that Civil servants who join the scheme should pay a small annual subscription, and since there are nearly 300,000 of them it is believed that a large income would be secured. It is suggested either that a nursing home should be purchased or that arrangements should be made with existing institutions.

MEANWOOD MENTAL DEFECTIVE COLONY, LEEDS. This colony is to be enlarged at a cost of £70,000 with a view to trebling its scope and usefulness. At present there are 170 beds with a waiting list of 500. Patients are to be housed in separate pavilions, each containing from 40 to 55 patients. Including interest, sinking fund, and maintenance charges, and deducting 50 per cent. on approved outlay contributed by the Board of Control, the scheme will cost the Leeds ratepayers about £10,000 a year.

EAST-END MOTHERS' LYING-IN HOME.—A formal annual meeting, for the purpose of electing the committee and honorary officers, was held at the Home on June 17th, under the presidency of Dr. Owen Lankester. A resolution expressing confidence in the work of the Home and adopting the annual report and balance-sheet was passed. During the year an adjoining building already arranged with cubicles suitable for nurses and provided with lecture rooms was acquired, and an appeal is being made for £14,500 to put the work on a reasonable financial basis under the new conditions, which will enable between 20 and 30 additional patients to be taken. The report of Dr. W. H. F. Oxley, the hon. visiting medical officer, shows that in 1924, 999 mothers were delivered in the Home and 1119 on the district. There was no maternal death, no case requiring Cæsarean section, and no case of puerperal septicæmia or eclampsia. All complicated cases are dealt with in the Home. Four patients were transferred elsewhere; one had puerperal mania, one paralysis, later developing epileptic convulsions, one pernicious anæmia, and one ovarian tumour, which was operated on in the London Hospital. All four made a good recovery.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Friday, July 3rd, at 5.30 P.M., Sir John Thomson-Walker will lecture on Urinary Infections (see "Medical Diary").—The special courses to be given during July include one, for a fortnight, starting on July 6th, in Children's Diseases at the Queen Hospital for Children, when there will be demonstrations of surgical, medical, orthopædic, skin, and chest cases, with lectures and operations; and a special three weeks' course in Neurology at the West-End Hospital for Nervous Diseases—comprising lectures and demonstrations on selected cases—at 5 P.M. daily, beginning on July 27th.—Lasting for a fortnight and beginning on August 4th, there will be an intensive course in General Medicine, Surgery, and the Special Departments at the North-East London Post-Graduate College (Prince of Wales's General Hospital), when lectures and demonstrations on all branches of medicine and surgery will be given. The daily sessions will last from 10.30 A.M. to 5.30 P.M.—Starting on the same date, the All Saints' Hospital will give a month's course of instruction in Urology; there will be clinical demonstrations throughout the month, and a special lecture will be delivered on each Wednesday afternoon.—From August 24th to Sept. 5th, the Queen Mary's Hospital, Stratford, will hold an intensive course, when lectures and demonstrations will be given in Medicine, Surgery, and the Special Departments.—Copies of the syllabuses and the programme of the Fellowship of Medicine may be obtained from the Secretary at 1, Wimpole-street, London, W. 1.

INTERNATIONAL CONGRESS OF NURSES.—A congress convened by the International Council of Nurses is to be held in Helsingfors, Finland, under the presidency of Baroness Sophie Mannerheim, matron of the Surgical Hospital, Helsingfors, commencing July 20th. Representatives are expected from the United States of America, from Canada, and from the Dominions, with a total attendance of at least 1000. Members of the public and of the medical profession are admitted to the meetings

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee 52 cases were considered and £573 voted to 39 applicants. The following is a summary of the new cases relieved:—

M.R.C.S. Eng., 1913, aged 35, who helped his father in practice until the father's death last year. Served in France, Salonica, and Egypt from 1914 to 1918. Discharged on account of dysentery and malaria. Disablement pay £126 per annum. Discharged himself from hospital but was taken suddenly ill and is now in lodgings in London, at a cost of £2 10s. per week. Emergency grant of £20 to help with debts contracted during this illness was paid. Case brought to the notice of the Fund by the Officers' Association.

Widow, aged 62, of M.R.C.S. Eng., 1873, who practised in London. Applicant divorced her husband in 1906, he married again and died in 1914. Since 1906 applicant has supported herself as a manageress in several posts. Suffers from severe varicose ulcers which obliged her to give up her posts. These illnesses exhausted her resources, and worry and anxiety brought on cerebral hæmorrhage on Feb. 15th of this year. Has recovered to the extent of getting about a little but could only take a very light post. At present without means and is dependent on some poor relations. Applicant has no children and no friends who can give any material assistance. Case brought up by Charity Organisation Society. Voted £26 in 12 instalments.

Daughter, aged 77, of M.R.C.S. Eng., 1839, who practised in London and died in 1872. Applicant and her sister kept a girls' school until too old to carry it on. She has an annuity of £67 and adds to this by teaching French and other languages to the extent of £10 last year. A boarder pays £1 a week and only 10s. during the holidays. Friends contributed £30, and her rent and rates come to £77 per annum. Applicant's sister was an annuitant of the Fund until her death last year. Voted £12 in 12 monthly instalments.

Widow, aged 59, of M.R.C.S. Eng., 1879, who practised in Kent, Yorkshire, and N. Wales and died in 1921. Applicant has supported herself by taking boarders, but she is compelled through ill-health to give this up. The three married sons allow her £1 10s. a week between them. The daughter, aged 30, is at home looking after the house. Income from boarders £96. Rent and rates about £48 per annum. Voted £18 in 12 monthly instalments.

Daughter, aged 29, of L.R.C.P. Edin., 1880, who practised in Lincolnshire and died in 1915. Applicant was left with her brother and sister to educate. She has struggled to do this by letting rooms and by clerical work. Her salary has been reduced to £2 a week and letting brought in £52. Rent and rates come to £78 per annum. Applicant asks for help for the fees which are owing for her brother, who is in his last term at school at Lincoln. Also for influence to get him a post in a bank. His ambition is to be a doctor or articled to a solicitor. She states that her sister also requires some work. Voted £20 and referred to the Guild for further inquiries.

Widow, aged 80, of M.R.C.S. Eng., 1898, who practised in West London and died in 1919. Applicant has been living on the capital left by her husband and has only £90 left. She is applying for the old age pension. Board-residence amounts to £2 2s. per week. Voted £26 in 12 monthly instalments.

Wife of M.B. who is at present in an asylum and has been for the last four and a quarter years. Applicant has only an income derived from a trust fund which amounts to about £27 per annum. A friend has given her £200, which is invested for the present. The husband's board has been reduced to £58 per annum and his sister defrays half of this amount. Son, aged 16, started in business in December as a junior clerk at £36 per annum. His travelling costs are 30s. a month and he has to pay for his lunches. Voted £18 in 12 monthly instalments.

Widow, aged 53, of M.R.C.S. Eng. who had a post at the Ministry of Pensions and died in March. Since October has been living on the bounty of friends. The friends think it is now time for the applicant to look for some work and help to keep herself. Has no income whatever, only a little pocket-money from a friend. Late husband was in receipt of £2 3s. 4d. a month from the Fund. Voted £12 in 12 monthly instalments.

Daughter, aged 69, of M.D. Edin., 1840, who practised in Sunderland and died in 1884. Applicant has managed to support herself although she is deaf and has been so since the age of 16. Has tried letting apartments but finds it does not pay. Only income £60 from the "Dull" Fund which she obtained in 1910. Rent and rates at present £77 per annum. Voted £12 in 12 monthly instalments.

Wife, aged 58, of L.R.C.S. Irel. who has chiefly taken locums. She is separated from her husband, who is a drug-taker and allows her nothing. Dependent on two daughters, whose incomes are really only sufficient for themselves. Voted £9 in 6 monthly instalments.

Subscriptions may be sent to the Hon. Treasurer, Sir Charters Symonds, 11, Chandos-street, Cavendish-square, London, W. 1.

INDIAN MEDICAL SERVICE: ANNUAL DINNER.

NINETY-TWO officers of the Indian Medical Service—the same number as a year ago—sat down to the annual dinner at the Trocadero, London, on June 17th. Lieut.-Colonel A. W. Alcock, C.I.E., F.R.S., occupied the chair, and the other members present were as follows:—

Major-Generals: Sir R. H. Charles, G.C.V.O., K.C.S.I.; Sir G. G. Giffard, K.C.I.E., C.S.I.; G. F. A. Harris, C.S.I.; R. Heard, C.I.E.; Sir P. Hehir, K.C.I.E., C.B., C.M.G.; H. Hendley, C.S.I.; A. Hooton, C.I.E.; J. B. Smith, C.B., C.I.E.

Air-Commodore: D. Munro, C.B., C.M.G.

Colonels: H. Ainsworth; A. Cochrane; J. Crimmin, V.C., C.B., C.I.E.; A. A. Gibbs; T. A. Granger, C.M.G.; J. A. Hamilton, C.M.G.; A. J. Macnab, C.B., C.M.G.; E. L. Perry, D.S.O.; J. J. Pratt; H. Austen Smith, C.I.E.; C. N. C. Wimberley, C.M.G.

Lieut.-Colonels: W. G. P. Alpin, O.B.E.; J. Anderson, C.I.E.; R. F. Baird; G. T. Birdwood; E. W. C. Bradfield, O.B.E.; J. T. Calvert, C.I.E.; D. G. Crawford; J. M. Crawford, O.B.E.; C. D. Dawes; C. L. Dunn; A. M. Fleming; A. T. Gage, C.I.E.; E. V. Hugo, C.M.G.; T. Hunter, C.I.E.; C. H. James, C.I.E.; S. P. James; J. G. Jordan; R. S. Kennedy, D.S.O., M.C.; J. C. G. Kunhardt; Clayton Lane; W. B. Lane, C.I.E., C.B.E.; W. H. Leonard; R. McCarrison, C.I.E.; F. O. N. Mell, C.I.E.; A. Miller; T. R. Mulroney; J. G. P. Murray; F. O'Kinealy, C.I.E., C.V.O.; N. Rainier; C. H. Reinhold; Sir J. R. Roberts, C.I.E.; Sir L. Rogers, C.I.E., F.R.S.; E. R. Rost, O.B.E.; H. E. Stanger-Leathes; S. Browning Smith, C.M.G.; R. Steen; Ashton Street; W. A. Sykes, D.S.O.; C. Thomson; W. H. Thornhill; J. H. Tull Walsh; H. J. Walton; C. E. Williams; Ellacott L. Ward; D. P. Warliker; N. M. Wilson, O.B.E.; H. G. L. Wortabet; A. C. Younan.

Majors: H. L. Batra; O. A. R. Berkeley-Hill; Sir T. J. Carey-Evans, M.C.; R. A. Chambers, O.B.E.; D. Coutts, M.B.E.; G. F. Graham; A. E. Grisewood; R. Knowles; B. E. M. Newland; P. M. Rennie; C. J. Stocker, M.C.

Captains: P. M. N. Antia; H. L. Barker; S. D. Billimoria; Leo Blake; H. Horan Brown; H. R. Cursetji; W. P. Hogg, M.C.; N. S. Jatar, D.S.O.; V. R. Mirajkar; C. S. V. Ramanan; W. C. Spackman; P. Vieyra.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Budget Concession to Medical Men.

A CONCESSION of some importance to medical men was granted by the Chancellor of the Exchequer during the Committee stage of the Finance Bill as the result of an amendment moved by Lieut.-Colonel FREMANTLE. It provides that the allowance of income-tax reductions in respect of the wear and tear of machinery and plant and in respect of expenses incurred in replacing obsolete machinery or plant shall in future apply to a profession, employment, vocation, or office, as well as a trade. Under this new clause a doctor's motor-car, if used in the course of his practice, will count as machinery and plant, and it will therefore be possible for a medical man to claim a deduction for the wear and tear of his car caused by its use for professional purposes. The exact amount of the deduction will be subject to arrangement between the taxpayer and the income-tax authorities.

Nursing Homes (Registration) Bill.

On June 19th Mr. HURST moved the second reading of the Nursing Homes (Registration) Bill, the principle of which, he said, was agreed to by all parties in the House. Captain ELLIOT (Under Secretary for Health, Scotland) said it was not possible to consent to the second reading of the Bill at that stage, but if the hon. Member would withdraw it he could make a promise on behalf of the Government to refer the subject of nursing homes to a Select Committee for inquiry. The Bill, on this undertaking, was withdrawn.

Public Health Bill.

On consideration of the Public Health Bill, as amended in Standing Committee, on June 19th, Mr. H. WILLIAMS moved a new clause which, he said, had been put down on the recommendation of the Royal Sanitary Institute. Its object was to isolate food intended for sale from causes of contamination, and gave the medical officer, sanitary inspector, and any other officer of the local authority the power to inspect a room in which food was kept in order to see that the provisions of the clause were being complied with. The clause was read a second time and added to the Bill. The Bill, which is a measure consolidating a number of powers conferred on certain local authorities by private legislation and making them applicable to the whole country, was read a third time.

HOUSE OF COMMONS.

THURSDAY, JUNE 18TH.

Medical Referees and Letters to the Press.

Mr. JOHN BAKER asked the Home Secretary whether his attention had been drawn to a letter from a medical referee under the Workmen's Compensation Acts which appeared in the *Morning Post* of June 5th; whether officers who were paid by the Ministry were allowed to express, in the public press, opinions contrary to the Acts which they were administering; and whether medical referees were governed by the ordinary rules governing the Civil Service, which prohibited officials from communicating to the press on matters connected with their employment.—Sir W. JOYNSON-HICKS replied: I have seen the letter. Medical referees are not Civil servants, but private practitioners paid by fees for their services in connexion with applications for compensation. No rules have been laid down as to communications by them to the press on subjects connected with the Acts, but I am sure that the referees generally appreciate the responsibility in this matter entailed by their special position.

Powers of Medical Referees.

Mr. JOHN BAKER asked the Home Secretary whether his attention had been drawn to a reserved judgment by his Honour Judge Ruegg, K.C., at Stoke County Court on June 3rd regarding the powers under the Workmen's Compensation Act of a medical referee; whether, seeing that it had been decided that a medical referee under the Act had authority to decide not only whether or no the man was suffering from the disability, but also whether or no he was fit for employment, he would consider the desirability of taking such action as might be necessary to limit the powers of the medical referee merely to deciding the question of the disability from which a man was suffering; and whether he would consider granting compensation to a man (F. B.) who was, at the time of his examination by the certifying surgeon, suffering from miner's nystagmus and was thereby disabled from obtaining employment.—Sir W. JOYNSON-HICKS replied: This case was one under the Industrial Diseases Section of the Act of 1906, and by that section the question whether a worker is disabled by an industrial disease from earning full wages at his ordinary work has to be determined by the certifying surgeon in the first instance and, on appeal, by the medical referee. The suggestion in the question would involve a complete change in the present system which has been in force for nearly 20 years and has, on the whole, worked well, and would apparently leave the question whether or not the worker was disabled by his disease to be fought out in the courts. I do not consider such a change is either necessary or desirable. In reply to the last part of the question, I have no power under the Act to grant compensation. This can only be done by the courts.

Ambulances and London Street Accidents.

Colonel DAY asked the Home Secretary if he was aware that a person meeting with an accident in the streets of London, however serious his condition might be, was compelled to await the arrival of an official ambulance before he could be removed; and would he examine these regulations with a view to the betterment of these conditions.—Sir W. JOYNSON-HICKS replied: I know of no such regulations. The instructions to the police are to give the sufferer the first consideration, and if an ambulance is not readily available to employ a cab or other vehicle if the patient's condition appears to justify it. It must however, be borne in mind that it is dangerous to move cases of many common types of injury in any vehicle but an ambulance. If the hon. Member will give me an instance where it was desirable to move a patient quickly and a refusal was given I will look into it.

Medical Men and Unattended Motor-cars.

Mr. NEIL MACLEAN asked the Home Secretary whether he was aware that regulations existed which rendered medical men liable to prosecution if they left a motor-car unattended in the street; and whether he proposed to issue a regulation exempting them when these circumstances arose in the course of their professional duties.—Sir W. JOYNSON-HICKS replied: Medical practitioners are not exempt from the ordinary law as to driving offences, and I understand that the Minister of Transport does not think it practicable to make exceptions to the existing law or regulations in favour of any particular class of persons. The police, of course, exercise discretion in regard to prosecuting for obstruction when it is caused by a doctor's attendance on a patient.

Mr. MACLEAN: Is the right hon. gentleman not aware that practitioners who are visiting sick patients have been summoned and that it is only owing to the good sense of the magistrate—even after the constable had explained the case—that they were saved from a conviction? Will the right hon. gentleman make some regulation which will enable a medical practitioner to have the particular privilege when visiting sick people of leaving his car unattended?

Sir W. JOYNSON-HICKS: I do not think it is desirable to make such a regulation. I have said that the police act with discretion. Quite conceivably it might happen that someone was ill in Bond-street and a medical practitioner might block the whole place for a couple of hours.

Proposed Removal of King's College.

Major Sir RICHARD BARNETT asked the President of the Board of Education whether the recommendation of the Haldane Commission on the University of London to transfer King's College from the Strand to the Bloomsbury site behind the British Museum was likely to be carried into effect.—Lord E. PERCY replied: King's College Council have intimated their unwillingness to contemplate moving King's College to the Bloomsbury site on the terms suggested. The Treasury are still in correspondence with the University of London on the subject.

Maternity Centres and Birth Control.

Mr. THURTLE asked the Minister of Health if he would make arrangements to give Parliament an opportunity of directing that maternity centres provided at the cost of public funds should be free to give information on birth control to such married women as desired it.—Mr. N. CHAMBERLAIN replied: Any question as to the possibility of arrangements being made for the discussion of this question on the floor of the House should be addressed to the Prime Minister.

Local Medical Research Committees.

Mr. GROVES asked the Minister of Health whether he was aware that within the county borough of West Ham a medical research committee had been formed composed of all the medical staff of the borough council, certain of the staffs of the local hospitals, and several local medical practitioners, and that this committee had paid serious attention to the questions of cancer and tuberculosis; and whether, in view of the urgent necessity of this specially scientific research being national instead of local, he would consider the recommendation for the establishment of such local medical committees in all counties and through the Ministry of Health provide the highest specialists in these subjects to collaborate with all local medical workers in order that the greatest possible degree of efficiency be obtained.—Mr. N. CHAMBERLAIN replied: The answer to the first part of the question is in the affirmative. As regards the second part attention has already been called in memoranda issued from the department to the advantages which may be derived from the consideration of certain problems relating to cancer by local committees of this nature, and I do not doubt that they could do valuable work in other directions. It would be premature, however, at this stage to make any general recommendation to all counties or to set up the specialist organisation suggested.

The Danger from Mosquitoes and Flies.

Mr. HERBERT WILLIAMS asked the Minister of Health whether his attention had been drawn to the fact that many parts of the country were now infested with mosquitoes and other flies, the bites of which often had very serious and occasionally fatal consequences; and whether his department was taking any steps to deal with the situation.—Mr. N. CHAMBERLAIN replied: The answer to both parts of the question is in the affirmative. This subject has received expert study in my department for some years, the results of which are put at the disposal of local authorities and individual inquirers, and are to be published shortly in collaboration with the entomologists of the British Museum (Natural History). I may add that it has been shown that the destruction of mosquitoes and the prevention of bites by these insects cannot be secured by the adoption of any single or simple formula. Any useful action must depend upon the identification of the species of mosquito prevalent in the area, and the adoption of measures appropriate to the natural history of that species.

Popular Education on Health Subjects.

Mr. RENNIE SMITH asked the Minister of Health whether he could take any steps to promote the medical education of the people.—Mr. N. CHAMBERLAIN replied: If, as I assume, the hon. Member's question refers to the provision of simple information of health questions, I may say that many local authorities already provide such information, and that my department have recently published a memorandum on public education in health by the chief medical officer which deals generally with such provision. A proposal to extend the powers of local authorities in this matter is now before Parliament.

MONDAY, JUNE 22ND.

Consumption of Opium in India.

Mr. MORGAN JONES asked the Under-Secretary of State for India whether he could give figures showing the consumption of opium in Calcutta, Rangoon, Amritsar, Bombay, Karachi, and Madras per 10,000 of the population; and whether he could state the normal amount per 10,000 considered adequate by the medical authorities in India.—Earl WINTERTON replied: The amounts consumed in Calcutta (including the suburbs and the towns of Howrah and Bally) and at Rangoon in 1923–24 were respectively 185 lb. and 226 lb. per 10,000. Figures for the other four towns mentioned are not available, but the amounts consumed in the districts of Amritsar, Bombay, Karachi, and Madras were respectively 56, 86, 43, and 53 lb. per 10,000. No pronouncement by the medical profession in India of the normal amount per 10,000 considered adequate is on record.

Colonial Medical Services.

Lieut.-Colonel ANGUS MCDONNELL asked the Secretary of State for the Colonies the percentage of local tax revenue expended on medical and sanitary services by the Governments of Kenya, Uganda, Tanganyika, Nigeria, Gold Coast, and Sierra Leone.—Mr. AMERY replied: Taking the figures from the current estimates and including expenditure on sanitary services which is shown under other heads of the estimates, the percentages are Kenya 12·3, Uganda 20·8, Tanganyika 17·23, Nigeria 21·9, Gold Coast 16·3, Sierra Leone 16·7. The Nigerian figures are, however, abnormal owing to certain exceptional expenditure of a non-recurrent character.

Investigation of Sleeping Sickness.

Sir GEOFFREY BUTLER asked the Secretary of State for the Colonies whether the Government of Uganda had been approached by the League of Nations with a request for the provision of hospitality at the Entebbe laboratory for a commission to investigate sleeping sickness; and what, if any, had been the reply returned.—Mr. AMERY replied: The appointment of such a commission was recommended to the Council of the League by the International Conference on Sleeping Sickness which recently sat in London. No actual proposal has yet been received from the League, but I have ascertained that if such a proposal is made the Government of Uganda will gladly coöperate by placing the laboratory at the disposal of the commission.

Shortage in R.A.M.C. Officers.

Lieut.-Colonel HENEAGE asked the Secretary of State for War what was the shortage in Royal Army Medical Corps officers in the army; how many civilian doctors were employed instead; and what was the extra cost, if any, to the Exchequer.—Captain KING (Financial Secretary to the War Office) replied: The shortage of Royal Army Medical Corps officers is 86. Of these, 30 would be under instruction at the Royal Army Medical College and elsewhere, leaving a shortage of 56 officers doing duty which is made up by employing 21 non-regular officers and 35 civilian practitioners. No extra cost to the Exchequer is involved.

TUESDAY, JUNE 23RD.

Maternity Centres and Birth Control Advice.

Mr. THURTLE asked the Prime Minister if, in view of the national importance of the matter, he could see his way to give the House an opportunity of directing that maternity centres provided at the cost of public funds should be free to give information on birth control to such married women as might desire it.—Mr. BALDWIN replied: In the present state of public business it will be impossible to find time for this, unless an opportunity should arise on the estimates of the Ministry of Health

Cost of Investigating Excessive Prescribing.

Mr. GROVES asked the Minister of Health if he was aware that his officers connected with the National Health Insurance had recently decided to charge against the funds of local insurance committees the cost of investigating excessive prescribing, and that these investigations were carried out for the purposes of his department; whether he would arrange for the necessary expenses incurred to be borne by his department and not imposed upon the local insurance committees; and whether he would state the names of the local insurance committees who had represented to this effect.—Sir KINGSLEY WOOD replied: The hon. Member is under a misapprehension in suggesting that there has been any change of policy in this matter. It was always intended that the cost of the investigations to which he refers should be met from the funds available for the administration expenses of insurance committees. My right hon. friend

is advised that the preparation of the statistical returns in question is properly a duty of these committees and he sees no justification for transferring the charge to the Exchequer. Representations in the sense indicated in the question were received from the insurance committees for Berkshire, Middlesex, the West Riding of Yorkshire, Birkenhead, Brighton, Liverpool, Reading, and Wigan.

Provision of Local Pathological Laboratories.

Mr. GROVES asked the Minister of Health whether he had considered the handicap to local medical research committees in the non-provision of pathological laboratories in connexion with local hospitals; and whether, in connexion with the Government's plans of research work, he would consider the provision of such equipment for the use of local medical men.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: There are no funds available at present for the provision of pathological laboratories for the assistance of local committees of this kind. In any future developments of health policy the provision of such laboratories will be borne in mind.

Hospitals for Expectant Mothers.

Colonel DAY asked the Minister of Health whether, in view of the heavy death-rate among women during childbirth, due to conditions over which they had no control, he would take such action that would result in local authorities providing a greater measure of hospital accommodation for expectant mothers; and, in cases of necessity, would he consider making provision for payment of cash grants to the mother or to such associations as already provided assistance to mothers both during and after childbirth.—Mr. N. CHAMBERLAIN replied: As regards the first part of the question I would refer the hon. and gallant Member to the answer which I gave on May 20th on this subject. As regards the second part I would point out that grants are already made from the Exchequer to local authorities and nursing associations, which provide skilled assistance during childbirth, and that every woman who is the wife of a man insured under the National Health Insurance Act is entitled to receive a sum of £2 as maternity benefit on her confinement, and if she is herself insured, a further sum of £2 The whole question of the provision to be made for maternity in the case of insured women and the wives of insured men will doubtless receive the consideration of the Royal Commission on National Health Insurance, which is now sitting

Consumptives in London Prisons.

Colonel DAY asked the Home Secretary if he was aware that there were insufficient cells set apart for prisoners suffering from tuberculosis in Pentonville and Brixton prisons, and, in consequence, such prisoners were sometimes put in the ordinary cells; would he take immediate action to improve the accommodation of sufferers from this disease in prisons; and, would he state if all ordinary cells so used were thoroughly disinfected after tuberculous patients had left them.—Sir W. JOYNSON-HICKS replied: The special cells for tuberculous cases, four at Brixton and eight at Pentonville, are sufficient for the usual average numbers of such cases Ordinary cells are not now used for tuberculous patients. When the number of cases exceeds the number of special cells, the patients are taken into the prison hospital and the rooms so used are disinfected afterwards.

DONATIONS AND BEQUESTS.—The late Miss Pringle Home Douglas, of Edinburgh, left by will, among other bequests, £1000 to the Edinburgh Royal Infirmary, for general purposes other than building, and £500 to the Convalescent Home, Murrayfield, in connexion with the Edinburgh Royal Infirmary.—Mr. William Shillito, of Wootton, Eccleshall, Staffs., left the residue of his property, amounting to about £5000, to the Stafford General Infirmary, where he had formerly been a patient.—Mr. Henry Hayward, of Kennington, S.E., and Eastbourne, left £1000 to the Royal Hospital for Incurables, Putney, and £500 each to Dr. Barnardo's Homes, Fegans' Homes, Spurgeon's Orphanage, Children's Convalescent Homes, and Muller's Home, Bristol.—Sir Edward Elias Sassoon left £5000 to his executors for such charitable objects as they may think fit.—Mr. James Baugardt Elmslie, of Hyde Park, W., left £1000 to St. Mary's Hospital, Paddington.—Mrs. Louisa Sophia Nourse, of Surbiton and Brighton, left £2000 to the Seamen's Hospital Society (Dreadnought), Greenwich, S.E., to endow two beds for the treatment of seamen in memory of her late husband, £1000 each to the Metropolitan Convalescent Institution, Victoria-street, S.W., the Samaritan Free Hospital for Women, Marylebone-road, and the Hospital for Epilepsy and Paralysis, Maida Vale.—Mr. John Ratcliffe, J.P., of Micklehurst, Cheshire, left £2000 to Oldham Infirmary.—Colonel Thomas Johnson Seppings, of The Grange, King's Lynn, left £2000 to the West Norfolk and Lynn Hospital, of which £600 are for a Seppings bed in the men's ward.

PROPOSED MEDICO-LEGAL INSTITUTE FOR LONDON.

THE annual meeting of the Medico-Legal Society was held in the Barnes Hall of the Royal Society of Medicine on June 23rd, under the presidency of Lord Justice Atkin, when a discussion took place on the suggestions made by a committee of the Council with the object of establishing in the metropolis a medico-legal institute.

The President said that no more important meeting had ever been held by the Society, nor could a proposal of greater seriousness be put forward in connexion with the matters with which the Society concerned itself. It was almost incredible to see how little provision was made in this great city for medico-legal research and teaching of any serious nature, in which lack London probably stood alone among the great centres of the world. Here there was no central institute, laboratory or museum, nor any organisation for giving unified teaching on such subjects. In saying this he fully realised that the medical schools were doing all they could in the matter according to the resources at their command. No one who had had anything to do with the administration of justice in this country could fail to appreciate the extraordinary importance of the proper development of medico-legal learning in reference to securing that justice was done; no session of any criminal court was ever held where topics of the greatest medico-legal importance were not introduced, and hence where it was not of the utmost importance that highly informed expert advice should be placed before the court. Though the country had been fortunate enough from time to time to be in possession of two or three really eminent experts upon whom reliance could be placed, it was still unfortunate that there had been no institute which would secure the general education of a sufficient number of people in the very highest branches of medico-legal work From the point of view of justice, when an expert was good he was very good, but when he was bad he was horrid. The need for this organised special training was even greater for defence than for prosecution, so as to arrive at the real truth.

Obviously in these days research must be unceasing; the modern criminal was making himself acquainted with all the latest developments of science, and it was essential that the State should be at least equally well armed.

Another matter of paramount importance was that instruction in medico-legal subjects was now part of the regular vocational instruction of those seeking a medical qualification; but clearly that instruction given at a number of different schools, none of which was specially equipped for the purpose, must be quite different from what that instruction would be if it could come from a central institute under the guidance and inspiration of some authority. He considered that proper instruction in medico-legal matters was as important for those who would practise the law—especially those in the criminal courts—as for those proposing to adopt the medical profession.

It was obviously impossible that such a far-reaching scheme as this could be carried out to any considerable extent by a society which was simply a scientific society. Very large interests were concerned. The Ministry of Health and the Home Office would be closely concerned with it; also public municipal bodies, and particularly the county council on account of its interests in the coroners. Similarly the great teaching bodies and London University were concerned. It would be impossible for such a project to proceed without the coöperation and benevolent interest of those various bodies.

The Need for Research.

Sir Bernard Spilsbury pointed out that the nine proposals set out in the circular were merely sugges-

tions. He had received a communication from Sir Archibald Bodkin, who considered that the proposal to establish such an institute was of great public importance. The present arrangements for skilled pathological examination were far from perfect, and the records of cases of importance and of researches carried out in connexion with them were nowhere collected or registered so as to be available for study. The staff of such an institute could be consulted confidentially in any suspicious case by medical men and by coroners, or by the police, or by Sir Archibald himself. Sir Bernard Spilsbury said he had heard also from Sir George Newman, of the Ministry of Health, who said that the more he thought about the project the more he felt himself in favour of it, and he would gladly do all in his power to support the scheme. The speaker said this scheme had been in men's minds for a long time, and when Sir William Collins was President of the Society he referred to it. At a later date, in 1907, Dr. Pernet dealt with the same subject and drew a contrast between the teaching of medical jurisprudence in Paris and in this country, to the distinct disadvantage of the latter. The contrast was greater at the present time because Paris now possessed a medico-legal institute as part of the equipment for teaching the subject. Organised teaching in medical jurisprudence had been given at Edinburgh from the commencement of the nineteenth century. In London those who collected specimens, &c., reserved them for teaching in their own schools, and the number of such specimens had always been inadequate. Yet London presented an immense field of material. In a few years great headway could be made and systematic post-graduate teaching on the subject could be given; and it would become very important for any applicant for the post of police surgeon to have had the benefit of such a course.

There was great need for research into medico-legal problems such as post-mortem changes, and the teaching of chemistry and bacteriology was at present in a very unsatisfactory condition. With such a proposed institute available, bodies on which inquiries were to be made could be preserved in cold storage, to prevent post-mortem changes taking place in the meantime, before the judicial trial was held.

Teaching Facilities.

Sir William Willcox said some such idea as that under discussion had been in the minds of those engaged in teaching forensic medicine ever since the foundation of this Society. One of the greatest difficulties in the way of the establishment of such an institute was the financial one, and that had been the difficulty in carrying out medico-legal work in London; there had been no special grant by the Government for the carrying out of medico-legal work. Careful consideration of the many interests involved would be necessary in carrying this project forward. At present medico-legal teaching in London was much decentralised; ten medical schools were teaching forensic medicine, which meant a wasteful repetition of the same course. One of the great advantages of such an institute would be to enable police surgeons to have training, as they were usually the first to see the body in cases of alleged suicide or murder. Even when such an institute was established, the delicate and careful investigations necessary when a life was at stake could not be carried out in the presence of a class of students. The institute would also be of the greatest value to the coroners of the metropolis.

Sir William Collins said this Society had been very successful in a number of directions, but not in the matter of educational, legislative, or administrative reform in regard to medical jurisprudence. In 1907 the Society joined with the L.C.C. in a deputation to the Lord Chancellor of the time on the subject of a reform in the matter of death certification and Coroners' law. Twenty reforms were then suggested, but scarcely any of them had yet been achieved. In forensic medicine there was certainly much opportunity for improvement; indeed, there was a time in recent years when the teaching and examinations on the subject were better than now. He had himself advocated the teaching of medical jurisprudence in London at fewer centres. But in the matter of administration it was possible to over-concentrate, and, except for greatly concentrated study of detail in a given case, he would not favour the centralisation of the work of making post-mortem examinations. Neither did he favour the idea that the control of investigation and research should be largely in the hands of a Government department, as it might tend to beaurocracy and stereotyping.

How to Carry the Proposals into Effect.

Dr. Halliday Sutherland asked as to the proposed steps to be taken to carry the proposals into effect if this meeting approved of the principle.

The President replied at once that if the meeting approved the principle of the proposals, the Committee would be authorised to take such steps as they thought necessary to develop the proposals and coöperate with all the interested parties, with power to add to their number. At a later stage, no doubt, they would report to the Society. He hoped that at a future date there would be a very large meeting, not confined to this Society, when, indeed, the matter might have so grown that the Society was no longer taking the lead. It would be a great step if, as a commencement, some laboratory accommodation and the nucleus of a museum could be secured.

Mr. Costello thought the project should remain in the hands of this Society and not be under the control of a Government department. He once asked for information as to prosecutions of butchers for exposing for sale tuberculous meat, and after many weeks of delay and receiving an acknowledgment from three departments to which his letter had been successively sent, he had no information whatever supplied. The usual post-mortem examinations made by medical practitioners were inefficiently done, and most of the legal disputes concerning deaths were due to the fact that an expert post-mortem examination had not been made.

Dr. M. I. Finucane thought the matter so important that it should be a Home Office question, and not one to be set going by a private society.

Sir Walter Fletcher contended there was an urgent national need for such an institute; it became largely a question of ways and means, and he feared the statutory difficulties would prove to be the more serious. From the standpoint of scientific research the proposal was of the greatest importance, and this work really placed under contribution all the sciences. He hoped future activities would succeed in linking the proposed organisation very firmly with existing laboratories and scientific research centres.

Mr. Ingleby Oddie, speaking as a coroner, referred to the great waste of valuable instructional material in London. There were available in London not more than half-a-dozen expert men, and as no organised training of experts was in progress, he asked what was to be done if anything happened to the few men in question.

Dr. A. S. Woodwark said he would like to see more attention paid to the matter of instruction in these matters in those whose function would be on the legal side. Half the battles fought in the law courts were directly due to ignorance on both sides. Also a very important sphere of work for the institute would be that connected with industrial diseases, matters of compensation and the like.

Dr. A. Hayden suggested that the matter was of sufficient importance to justify asking for a Royal Commission. This would not only bring it before the public, but might bring in subscriptions.

Dr. Godfrey Carter (Sheffield) hoped something tangible would eventuate from the proposal, as certainly the provinces needed a stimulus in the matter of teaching medical jurisprudence.

A Resolution Carried.

The President briefly summed up and replied to some of the points raised in the discussion. A Royal Commission, though sometimes bringing desirable results, had, on occasion, proved a means of shelving a subject. He did not think the Home Office or any other department would seek to manage such a concern. He agreed that industrial diseases and questions might well come within the range of the institute's activities. There was still much requiring to be done in association with the kind of problems which were continually being brought into the courts. There could be no idea of at once starting in a splendid building, full equipped, but it was essential that some sort of start should be made, and then, he did not doubt, the matter would develop. His lordship proposed, from the chair: "That this meeting expresses its general approval of the proposal for establishing a medico-legal institute, and requests the Committee to take such steps as they may think necessary to develop the proposal, in coöperation with all interested parties, with power to add to their number." This was unanimously carried.

The President said the Committee would report to the Society from time to time when any definite results could be communicated.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Wednesday, July 1st.

ANNUAL GENERAL MEETING OF FELLOWS: at 5 P.M. To receive the annual report of the Council. Election of Officers and Council for Session 1925–26.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, June 29th, to SATURDAY, July 4th.—WEST LECTURE HALL, Royal Society of Medicine, 1, Wimpole-street, W. Lecture arranged by the Fellowship of Medicine and open to all members of the medical profession. At 5.30 P.M. on Friday, July 3rd, Sir John Thomson-Walker on Urinary Infections.—LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. Special Post-graduate Course for practitioners. Second week. Daily, 4.30 to 6 P.M. Clinical demonstration for one hour on medical and surgical cases, the ultra-violet lamp, Some Syphilitic Skin Lesions. Lecture for half an hour.—ST. PETER'S HOSPITAL, Henrietta-street, W.C. Post-graduate Course in Urology. Clinical work every afternoon in the Hospital. Lectures: Monday, Mr. J. Alban Andrews on Genito-Urinary Tuberculosis; Tuesday, Mr. J. Swift Joly on Urinary Calculi; Wednesday, Mr. Clifford Morson on Urinary Antiseptics; Thursday, Mr. F. J. F. Barrington on Non-Tuberculous Infections of the Urinary Tract; and Friday, Sir John Thomson-Walker on Urinary Obstruction.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, June 29th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Donald Armour: Operations. 2 P.M., Mr. Bishop Harman: Eye Dept.

TUESDAY.—10 A.M., Medical Registrar: Clinical Methods. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Addison: Operations.

WEDNESDAY.—2 P.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Owen: Medical Out-patients. 2 P.M., Mr. Tyrrell Gray: Operations.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 12 noon, Surgical Registrar: Surgical Pathology 2 P.M., Mr. MacDonald: Genito-Urinary Dept.

FRIDAY.—11 A.M., Dr. McDougal: Electrical Dept. 10.30 A.M., Dr. Dowling: Skin Dept. 2 P.M., Mr. Sinclair: Surgical Out-patients.

SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.

Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone-road, N.W.

THURSDAY, July 2nd.—5 P.M., Mr. L. G. Phillips: Intracranial Hæmorrhage.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

TUESDAY, June 30th.—4.30 P.M., Dr. F. Thomson: Cases illustrating the Early Diagnosis of the Infectious Fevers (at the North-Eastern Hospital, St. Anne's-road, N.).

FRIDAY.—4.30 P.M., Mr. Aubrey Goodwin: Expectant Obstetrics.

Daily.—Clinics in General and Special Departments, Demonstrations, Operations, &c.

THE LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester-square, W.C.

TUESDAY, June 30th.—5 P.M., Dr. Roxburgh: Diseases of Nails.

THURSDAY, July 2nd.—5 P.M., Dr. Haldin Davis: Peculiar Forms of Psoriasis.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, July 2nd.—4 P.M., Dr. Nabarro: The Cerebro-spinal Fluid in Health and Disease.

Appointments.

HOSKINS, W. D., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the St. Just District of the County of Cornwall.

INGRAM, JOHN T., M.B., B.S.Lond., M.R.C.S., Physician to Out-patients to the Evelina Hospital for Sick Children, Southwark.

SYMONS, A. D., M.D. Bristol, M.R.C.S., D.P.H., Medical Officer of Health, School Medical Officer, &c., for Shrewsbury.

University of Leeds: DOBSON, J. F., M.S. Lond., F.R.C.S. Eng., COLLINSON, H., M.S. Lond., F.R.C.S. Eng., Professors of Clinical Surgery; BRAITHWAITE, L. R., M.B., Ch.B. Manch., F.R.C.S. Eng., Director of Surgical Research.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen University.—Second Asst. in Pathology. £250 12*s.*

Birmingham, City Mental Hospital.—Asst. M.O. £350.

Birmingham and Midland Hospital for Skin, &c.—Hon. S.

Bloomsbury Dispensary, 12, Bloomsbury-street, W.C.—Res. M.O. £250.

Bolingbroke Hospital, Wandsworth Common, S.W..—Hon. Asst. S. to Ear, Nose, and Throat Dept.

Bolton, Townleys Hospital, Farnworth.—Second Asst. M.O. £225.

Bradford Royal Infirmary.—Res. Surg. O. £250.

Bury County Borough.—Asst. M.O.H., &c. £600.

Cambridge, Addenbrooke's Hospital.—H.S. at rate of £130.

Chester Royal Infirmary.—Hon. Asst. S.

City of London Hospital for Diseases of Heart and Lungs, Victoria Park, E.—Res. M.O. £250. Also H.P. at rate of £100.

Colindale Hospital, Hendon, N.W.—Jun. Asst. M.O. £500.

Croydon County Borough.—Asst. M.O.H. and Asst. Sch. M.O. £600.

Croydon General Hospital.—Cas. H.S. £100.

Dover Borough.—Asst. M.O.H. £750.

Dudley Guest Hospital and Eye Infirmary.—H.S. £175. Also Asst. H.S. £150.

Dumfries and Galloway Royal Infirmary.—Jun. Res. M.O. £125.

Dundee, University College.—Chair of Anatomy.

Edinburgh, Chalmer's Hospital.—Res. M.O. and Res. S.O.

Epsom, The Manor.—Jun. Asst. M.O. £440.

Halifax Royal Infirmary.—Hon. Radiologist.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—H.P. for six months. £50.

Hull, Institution Infirmary, Beverley-road.—Res. Asst. M.O. £350.

Ilford Urban District Council.—Asst. M.O.H. £600.

Liverpool, Mill-road Infirmary.—Res. Asst. M.O. £200.

Liverpool, St. Paul's Eye Hospital.—Two Hon. S.'s.

London Hospital Dental School, E.—Asst. Dental Anæsthetists. £25 each.

London Hospital, E.—Two Hon. Asst. Aural S.'s. Also First Asst. to one of the five Surg. Firms. £400.

London Lock Hospital, 283, Harrow-road, W.—Second H.S. £150.

London School of Hygiene and Tropical Medicine.—Lecturer on Trop. Hygiene. 200 guineas per annum.

Manchester, Crossley Maternity Hospital, Ancoats.—Half-time Res. M.O. at rate of £50.

Manchester Royal Infirmary and Dispensary.—Hon. Asst. Gynæcol. S.

Manor House Hospital, Golders Green, N.W.—H.S. £200.

National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—Asst. P.

New Zealand Government, Mental Hospitals Dept.—Two Asst. M.O.'s. £615.

Notts Education Committee.—School Dentist. £500.

Perth and District Hospital, Glam.—Res. S. £750.

Royal Westminster Ophthalmic Hospital, King William-street, Strand, W.C.—Refraction Asst. at rate of £100.

Sheffield, Jessop Hospital for Women.—Sen. Res. O. at rate of £250.

Sheffield University and Jessop Hospital for Women.—Asst. Path. and Demonstrator of Anatomy. £300.

Sudan Government, Wellcome Tropical Research Laboratories, Khartoum.—Asst. Bacteriologist. £E.720.

Sunderland Royal Infirmary and Children's Hospital.—Hon. S. for Nose, Throat, and Ear work.

Surrey County Council.—Asst. M.O.'s in Pub. Health Dept. £600.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—H.P. and H.S. Each at rate of £100.
Western Ophthalmic Hospital, Marylebone-road, N.W.—Hon. Asst. S.
West Ham Union.—Dist. M.O. £914.
Westmorland County Education Committee and Kendal Borough Education Committee.—Dental Practitioner. £500.
The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Pickering, Yorks, N. Riding; Barnstaple, Devon; Broughton-in-Furness, Lancs; Durham, Durham; Helsby, Cheshire; Loanhead, Edinburghshire; and Chulmleigh, Devon.

Births, Marriages, and Deaths.

BIRTHS.

BLAKE.—On June 14th, at Oakley House, Acle, the wife of Eliot Blake, M.R.C.S., of a daughter.
FORREST.—On June 19th, at 10, Coates-crescent, Edinburgh, the wife of A. W. Forrest, M.A., M.D., D.P.H., Wandsworth Common, S.W. 18, of a son.
FORSTER.—On June 16th, at Upper Duke-street, Liverpool, the wife of Henry Vincent Forster, M.C., M.B., Ch.B., of a son.
HOOPER.—On June 14th, at a nursing home, Caversham, the wife of Norman Hooper, of a daughter.
LAPAGE.—On June 17th, at Barton House, Didsbury Park, Manchester, to Dr. and Mrs. C. P. Lapage, a daughter.
MILNE.—On June 12th, at 18, Walker-street, Edinburgh, to Dr. and Mrs. C. G. S. Milne, MacRobert Hospital, Cawnpore, India, a son.

MARRIAGES.

ALDRED-BROWN—CROWE.—On June 17th, at Holy Trinity Church, Brompton, Ronald Aldred-Brown, B.M., B.Ch. Oxf. to Doreen Mary Barby Crowe, only daughter of Colonel and Mrs. P. B. Crowe, of Gilston-road, South Kensington.
HOLDEN—DRYSDALE.—On June 6th, at St. Mary's Church, Guildford, Dr. S. J. C. Holden, County Medical Officer of Health, Buckinghamshire, son of the late Rev. Joseph Holden, Vicar of Antrotus, Cheshire, to Jean, elder daughter of Mrs. Drysdale, King's Corner, Guildford.
STIRLING—MATTHEW.—On June 20th, at St. Columbia's, Pont-street, Major A. Dickson Stirling, D.S.O., R.A.M.C. to Isobel, only surviving daughter of the Rev. and Mrs. L. C. Matthew, Warwick-avenue, Bedford.
TAIT—ALFORD.—On June 20th, at St. Matthias's, Richmond Hill, Greville Brend Tait, M.B., B.Ch., to Elizabeth Joan, elder daughter of Mr. J. S. Alford and Mrs. Alford, of Richmond, Surrey.
THOMSON—MCLEAN.—On June 20th, at the Presbyterian Church, Highgate, Douglas McKenzie Thomson, M.B., C.B., Arbroath, to Mary Elizabeth McLean, niece of Captain and Mrs. Warden, Talbot-road, Highgate, London.

DEATHS.

COKE.—On June 19th, at Fitzgeorge-avenue, West Kensington, Edmund Percival Isaacs Coke, M.R.C.S., L.R.C.P., aged 56.
NIGHTINGALE.—On June 20th, at Busketts, Woodlands, near Southampton, after a short illness, Samuel Shore Nightingale, M.R.C.S., L.R.C.P., D.P.H., in his 65th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTTINGHAM GENERAL HOSPITAL: THE RANSOM MEMORIAL.—As a tribute to the memory of Dr. William Henry Ransom and his son, Dr. William Bramwell Ransom, of Nottingham, a new pathological department was opened at the Nottingham Hospital recently by Sir John Rose Bradford. Sir Charles Seeley presided, and among those present were the Bishop of Southwell, Mr. F. Acton, Dr. F. H. Jacob and Mr. J. K. Wright. Dr. W. H. Ransom was honorary physician to the hospital from 1854 to 1890, when on his resignation his son carried on the duties till 1909. Sir John Rose Bradford said that the two men whose names the hospital extension would perpetuate did not confine themselves to the narrow pursuit of their profession, but took an active part in the promotion of all work designed to make the individual more efficent for the discharge of his duties as a citizen. The period covered by father and son had seen a great advance in medicine, and both had borne their full share of the work upon which progress had been based. Sir John Rose Bradford referred to the fact that during the first half of the life of the father fever was detected by the hand of the physician, while at the time of the birth of the son the thermometer was being used for that purpose. The value of laboratories and laboratory methods in the daily work of medicine, said Sir John Rose Bradford, was now so universally recognised that not only could no hospital dispense with them but no practitioner could do his work without having means of access to a laboratory. As the Ransoms had been remarkable as pioneers in recognising and in developing laboratory methods, the form which the memorial to their memory had taken was singularly appropriate.

Notes, Comments, and Abstracts.

LARVICIDES IN MOSQUITO CONTROL.*

BY JOHN F. MARSHALL,
DIRECTOR OF THE MOSQUITO CONTROL LABORATORY, HAYLING ISLAND, HANTS.

IN Great Britain 25 different species of mosquitoes are at present known, only three of these belonging to the Anopheline tribe. The British mosquitoes may be roughly divided into three general classes—namely, (1) domestic mosquitoes, which breed largely in collections of water near dwelling houses; (2) rural mosquitoes, which breed in the stagnant and non-salt water of ditches, pools, or swamps; and (3) salt-water mosquitoes, which breed in stagnant salt, or partly salt, water. Along the south coast there are probably only five species of mosquitoes which require consideration from the "nuisance-producing" point of view. These are (1) the Anopheline mosquito, *Anopheles maculipennis;* (2) and (3) the "domestic" mosquitoes, *Culex pipiens* and *Theobaldia annulata;* (4) the "rural" mosquito, *Ochlerotatus rusticus;* and (5) the "salt water" mosquito, *Ochlerotatus detritus.* With the exception of (1), all these mosquitoes belong to the Culicine tribe. Mosquitoes belonging to the Culicine tribe are incapable of transmitting malaria, but they must not, on this account, be regarded as harmless insects, since their bites may be followed by serious, and even fatal, results. There are many localities in England (some of them even in the near neighbourhood of London) where mosquitoes create an almost intolerable nuisance throughout every summer and autumn.

Methods of Attack.

Experience has shown that the only effective means of controlling mosquitoes is to attack them in the larval stage, either by destroying the larvæ or by abolishing the stagnant water which is essential for larval existence. In the first case, the larvæ are either (1) suffocated by covering the surface with a film of paraffin, or (2) poisoned by mixing larvicides with the infested water. In the second case, various engineering methods are made use of to prevent the stagnation of water.

[Mr. Marshall then discussed these various methods, all of which are now well established in the fight against mosquitoes. With regard to larvicides, he said:—]

For a larvicide to be of any practical use in mosquito control work, it must be (1) inexpensive, (2) harmless to human beings or animals who may happen to drink the water treated, and (3) effective in action whether the water to be treated is fresh, brackish, or salt. Experiments carried out at Hayling over three years ago with regard to the larvicidal qualities of various substances showed that a specially prepared sanitary fluid containing 20 per cent. of soluble cresol and known as White Cross disinfectant gave extremely satisfactory results both in the laboratory and in the field. In a dilution of 1 part in 16,000 it killed the larvæ of *Ochlerotatus detritus* in one hour; in a dilution of 1 in 32,000 in one and a half hours; and in a dilution of 1 in 48,000 in three and a half hours. This fluid gave perfectly satisfactory results when the larva-infested water was partly, or even wholly salt. The only point that requires attention when this fluid is being used with brackish or salt water is the fact that it should be mixed with a little fresh water before being used; it will then diffuse readily in the water to be treated, however high the proportion of salt water present.

Calculating the Amount Required.

If a breeding-place has a surface area of A square yards and an average depth of d inches, the number of gallons of larvicide that must be put in to attain any desired "strength" of 1 part in "n" parts is given by the formula—

$$\frac{14 \times A \times d}{3 \times n}$$

If the larvicide is used in a proportion of 1 part in 28,000, which is a suitable "strength" in the case of White Cross fluid, the above formula reduces very simply to—

$$\frac{A \times d}{6000} \text{ gallons.}$$

That is to say, to calculate the number of gallons of the above larvicide required to treat any given piece of water, it is only necessary to multiply the surface area in square yards (A) by the average depth in inches (d) and divide the product by 6000. Say, for instance, that the piece of water

* Abstracted from a paper on the Control of Mosquitoes read before the Portsmouth Literary and Philosophical Society.

to be treated is 100 yards in length, 15 yards in width, and 6 inches in (average) depth, then the area A is 1500 square yards, and the amount of larvicide required is

$$\frac{1500 \times 6}{6000} \text{ or } 1\tfrac{1}{2} \text{ gallons.}$$

When adding the larvicide to the infested water, care should be taken to distribute it as uniformly as possible. In any case it is better first to dilute the total "dose" with three or four times its bulk of fresh water and then introduce the mixture by instalments. One way is to use a watering-can with a rose nozzle, the operator wearing "waders" and treating successive "strips" of the water. Another very effective method is to "sling" the successive instalments of the mixture out of an ordinary handbowl. Very little practice is required to distribute the mixture uniformly and rapidly in this way.

Safety of Domestic Animals.

A great deal of prejudice exists against the use of larvicides, owing to the popular idea that anything which is capable of killing a mosquito larva will render the water equally unsafe for domestic animals, or even human beings, who may happen to drink it. To show the fallacy of an argument of this kind, consider the case of White Cross disinfectant, and assume that it is being employed in a strength of 1 in 28,000, which is the proportion recommended. Water thus treated may be drunk by domestic animals with absolute impunity. The constituents of this fluid are, indeed, actually employed in veterinary medicine—and even to obtain a *safe medicinal dose* of the very diluted mixture in question a cow would have to drink more than 100 gallons, a horse more than 80 gallons, a pig more than 20 gallons, and a dog more than 10 gallons. Even a hen would not have taken her safe medicinal dose until she had consumed just on 2 gallons of the treated water. There is, therefore, no danger whatever to be apprehended from the use of this liquid in the proportion necessary; and in the treatment of open and exposed breeding-places its use is much to be preferred to that of paraffin.

In dealing with sheltered breeding-places, the question of which method shall be adopted is largely one of expense. It must be remembered that when paraffin is used the amount required depends only upon the area of surface to be treated; but in the case of a larvicide, which has to diffuse throughout the whole body of water, the depth of the water is also an important factor. If the thickness of an effective paraffin film is assumed to be 1/1500 inch, then the cost of treating a piece of water of depth d inches with a larvicide which is c times as expensive as paraffin, and which has to be mixed with the infested water in a strength of 1 in n, is

$$\frac{1500 \times c \times d}{n}$$

times the cost of paraffining the same piece of water. In the case of any larvicide for which c and n are known, it is easy to calculate the depth of water at which the cost of paraffining and larviciding are the same. With White Cross fluid, for example, the dilution recommended is 28,000 and the cost about four times that of paraffin. Insertion of these values in the above formula shows that the depth in question is 4¾ inches; and for any depth less than this the larvicide in question is the more economical method of the two.

Nuisance at Seaside Resorts.

In intertidal areas where sea water is allowed to accumulate and stagnate, the larvæ of the salt-water mosquito (*Ochlerotatus detritus*) are generally to be found in enormous numbers throughout every month of the year. The adults of this species (which hatch out almost continuously from April until November) have a much greater range of flight than any of the non-salt water mosquitoes; and this fact considerably increases the difficulties of mosquito control work in low-lying coastal districts. It may be stated definitely that the "mosquito nuisance" experienced in so many of our seaside resorts is most frequently caused by salt-water mosquitoes invading the residential district from breeding-places situated on the outskirts of the town. Hence the attempts occasionally made by local authorities to alleviate the nuisance by paraffining collections of stagnant water within the residential district only are in the majority of cases to be deprecated; not only because they are a sheer waste of public money, but also because their futility tends to diminish public confidence in anti-mosquito work generally.

As regards the various species of mosquitoes which breed in non-salt water, it should be noted that long-established collections of water, such as ornamental lakes, cattle ponds, &c., frequently contain fish, water bugs, and other creatures which devour mosquito eggs and larvæ and thus render mosquito breeding impossible. Under these conditions the addition of larvicide is not only unnecessary but may actually do harm by destroying some or all of the benevolent "mosquito enemies" present. Hence water should never be treated with larvicide unless the presence of larvæ has been actually observed.

NATIONAL COUNCIL FOR THE UNMARRIED MOTHER AND HER CHILD.

THE annual meeting took place at Carnegie House, 117, Piccadilly, on June 18th, under the presidency of Lord Henry Cavendish-Bentinck, his place being later taken by Mrs. H. A. L. Fisher. The annual report and balance-sheet were read and passed, and the officers and members of the executive committee were elected. Mrs. W. A. Potts, of Birmingham, read a paper on the Mental Deficiency Act as it affects Unmarried Mothers. A considerable number of the unmarried mothers who applied for Poor-law relief, she said, were mentally defective, and they constituted the real problem. The Mental Deficiency Act provided for placing in an institution or under guardianship women who were mentally deficient and were in receipt of Poor-law relief; the guardians therefore incurred responsibility if they discharged a mother of more than one illegitimate child without bringing the facts before the Mental Deficiency Committee. Among cases known to her personally who had been discharged without examination, Mrs. Potts mentioned: (1) A girl of 16 with two illegitimate children. She had a mentally defective brother aged 25. (2) A woman of 30 with four illegitimate children. There was a defective sister of 27. (3) A girl of 19 with two children. She had attended a special school. It was far the most merciful thing to put these women under supervision. They would only be properly cared for when the Mental Deficiency Act was used to its full extent.

Lady Nott-Bower said the question of certification was difficult because, before a doctor could certify a girl as mentally deficient, he had to produce evidence of deficiency from an early age. She advocated the establishment of more hostels under good management, where the girls could have work graded according to their capacity. The babies should remain with their mothers up to the age of 2 years, after which there were a good many associations which took children without their mothers. It was pointed out in discussion that the fact of sexual obsession implied in having several illegitimate children did not of itself constitute certifiable mental deficiency.

MOTHERCRAFT.

THE well-known little book entitled "Mothercraft,"[1] which consists of a selection from lectures delivered under the auspices of the National Association for the Prevention of Infant Mortality, has almost reached the stage when it might well be called the "Mothercraft Annual." Each edition, and this is the fifth, has shown signs of careful revision, and while the size of the book has not been greatly altered, the material it contains represents the very latest teaching on all the various branches of the "craft." Miss Norah March's article on the psychology of the infant in this edition is something rather novel, and while prevention is an admirable slogan when dealing with mental as well as with physical disorders, it is doubtful whether the average mother will effectively understand much of this article. An advertisement for ultra-violet light lamps has crept into the middle of an article on the sun-cure and its substitutes by Percy Hall, but despite these minor defects, the book still remains a most valuable guide to the subject of mothercraft, the essentials of which, as Dr. G. F. Still says in his introduction, "it is high time that every girl as a part of her education should be required to learn."

COLONIAL MEDICAL SERVICES: EXPENDITURE ON RESEARCH.

IN reply to questions by Lieut.-Colonel Angus McDonnell in the House of Commons on June 15th and 22nd, Mr. Amery gave some figures of expenditure on medical research work in certain Crown Colonies and Protectorates. Such expenditure, said Mr. Amery, is provided separately in the Budget of each Colony or Protectorate, and in view of the additions made to the territories the figures would not give a satisfactory standard of comparison. He contented himself, therefore, with giving, so far as they can now be ascertained, the amounts provided for the years 1901 and 1924 for Trinidad, Hong Kong, and the Gold Coast respectively, as representing three of the four important divisions of the Colonial Empire. The fourth, East Africa, was not administered by the Colonial Office in 1901. Expenditure on

[1] Fifth edition, revised and enlarged. London: The National League for Health, Maternity and Child Welfare. 1925. Pp. 400. 4s. 6d.

medical research was, he added, not distinguished from other medical expenditure, and it was still the case that a good deal of the research that was done was not, as a rule, separately provided for.

—	1901.	1924.
Trinidad :—	£	£
Staff, medical men	18,926	30,034
Others	17,261	40,013
Research	Nil	Nil
Total cost*	76,947	152,781
Hong Kong :—	$	$
Staff, medical men	30,155	170,246
Others	96,719	642,652
Research	Nil	59,341†
Total cost*	283,127	1,273,640
		(1923–24.)
Gold Coast :—	£	£
Staff, medical men	15,708	63,165
Others	5,072	51,780
Research	Nil	7,348
Total cost*	30,298	236,506

* Total cost of administration of medical and sanitary services.
† Bacteriological Department and Government Laboratory.

Ceylon.

1910–11.
No special provision was made in the estimates for medical research. Rs.4,407,329 were provided for medical (including sanitary services) of which Rs.753,666 represented the salaries of qualified medical officers.

1923–24.
Provision was made for an expenditure of Rs.70,142 on medical research—i.e., a special investigation into malaria—and of Rs.7,488,600 in respect of medical and sanitary services. Included in the latter sum was a total of Rs.1,489,125 for the salaries of qualified medical officers.

Malayan Medical and Sanitary Services.

	1910.				1923.		
	£	s.	d.		£	s.	d.
Total cost of services ..	212,818	11	0	..	727,161	1	0
Amount spent on research ..	6,213	15	8	..	18,987	3	0
Salaries of qualified medical officers	38,089	16	0	..	161,575	12	8

Nigeria.

1910.		1923–24.	
Medical research :—		Nigeria	£6220
Northern Nigeria ..	Nil		
Southern Nigeria* ..	£679		

* The other West African Colonies contributed £1017 to the Lagos Medical Research Institute in addition.

Total Medical and Sanitary Services.

1910–11.			1923–24.	
	£			£
Northern Nigeria ..	34,822		Nigeria :—	
1910.			Medical	237,829
Southern Nigeria :—			Sanitary	57,411
Medical .. £70,794			Research	6,220
Sanitary .. 4,045				£301,460
Research .. 679				
	75,518			
Total ..	£110,340			

Salaries of Qualified Medical Officers.

1910–11.		1923–24.	
	£		£
Northern Nigeria ..	23,556	Nigeria	116,239
Southern Nigeria ..	40,913		
Total	£64,469		

Kenya.

	1910–11.	1923–24
	£	£
Medical Services, Sanitary Services	28,367	113,698
	.....	12,545
Salaries of qualified officers	10,140	24,564

Medical research not separately shown.

Jamaica.

No figures are available as to the amount spent on medical research. The total expenditure on medical and sanitary services (including salaries) was : 1910–11, £64,685 ; 1923–24, £125,485. The salaries of qualified medical officers were : 1910–11, £11,815 ; 1923–24, £19,469.

GUERNSEY: VICTORIA COTTAGE HOSPITAL.

THE thirty-seventh annual report of this institution (for 1924) reveals a welcome, though unfortunately rare, state of financial prosperity. The total expenditure for the year 1924 was £1943 and the total income amounted to £3223. Of this sum £1232 counted as extraordinary income, being due to legacies and bequests, and was transferred to the capital account, leaving a credit balance of £48, surplus of income over expenditure. The hospital stands in a healthy situation in a suburb of St. Peter Port, overlooking the sea. It contains 25 beds, a well-equipped operating room, and an X ray department. Any medical man practising in Guernsey is eligible for election on the honorary medical staff, and is entitled to attend his own patients in the hospital. There is no out-patient department. Dr. P. S. Hichens, late honorary physician to the Northampton General Hospital, has just been appointed honorary secretary in succession to the Rev. J. D. Stevens, retired. During the year 1924 348 patients (189 males and 159 females) were admitted to the hospital—the greatest number yet admitted during one year. Of these, 133 were charged from 15*s.* to 20*s.* a week, according to their circumstances, the rest being treated free. The daily average of beds occupied was 15 and the cost per patient per day 7*s.* 7*d.* There were 16 deaths during the year—eight medical and eight surgical cases. 256 operations were performed (an increase of 38 on the previous year). Among the surgical cases there were as follows : Tonsils and adenoids operated on, 63 ; diseases peculiar to women, including two Cæsarean sections, three of ectopic gestation, and four of cancer of breast, 42 ; appendicitis, 38 ; hernia (two strangulated), 9 ; fractures, 13 ; dislocations, 5. There were no cases of rickets in this hospital, possibly owing to the abundant sunlight for which Guernsey is renowned. In addition to the Victoria Hospital there are three State hospitals in Guernsey—the Town Hospital in St. Peter Port with 195 beds, the Country Hospital in the centre of the island with 160 beds, and the King Edward Sanatorium, an isolation hospital for infectious diseases.

MERCUROCHROME IN GONORRHŒA.

To the Editor of THE LANCET.

SIR,—In your issue of June 20th Mr. W. H. Martindale recalls the serious misprint in Young's original article wherein 2·5 per cent. was made to read 25 per cent. It is also true, as he remarks, that the drug has been severely criticised ; but this is not to say that it is wholly without value.

Mercurochrome-220, the disodium salt of dibromo-oxymercuri-fluorescein, links an antiseptic with a dye in the effort to attain a tissue-penetrating effect impossible with a colloid by reason of its physico-chemical nature. The writer was favoured with an early supply, but found it usually too irritating for use in urethritis, even a 1 per cent. aqueous solution causing intense and persistent pain in certain patients. In one instance the use of a 5 per cent. solution in the male urethra produced symptoms of renal congestion ; and quite a number of cases of mercurial poisoning have been reported following its injection intravenously. It has numerous incompatibilities, including most anæsthetics, only those without basic properties—e.g., saligenin or benzyl alcohol—being permissible.

On the other hand, provided its staining properties be not objected to, a 2 or up to 5 per cent. solution is an excellent application for surface lesions, and equally useful for balano-posthitis or for painting the vaginal walls, from which absorption is slight. A colleague has reported in THE LANCET the routine use of a 25 per cent. solution for painting the vagina in children, but apart from obvious dangers it is questionable if any object is served by the employment of so strong a concentration.

I am, Sir, yours faithfully,
H. D. L. SPENCE.

Great Russell-street, London, W.C. 1, June 19th, 1925.

A USEFUL AND VALUABLE APPLIANCE.

To the Editor of THE LANCET.

SIR,—About a month ago, whilst opening and closing a drawer in my dining-room sideboard, the idea occurred to me that much benefit and comfort might be obtained by sick persons and chronic invalids by adapting a similar sliding arrangement to what is known as the "bed-pan." The provision necessary for carrying out what I suggest is : (1) A hole of sufficient size and suitable shape in the mattress and wire sheeting on which it lies ; (2) a sliding shelf to which the bed-pan is affixed ; (3) a frame standing on four legs like an ordinary chair, in which the shelf can be applied or withdrawn. At the end of each leg is a castor or small swivelled wheel, and this enables the nurse or attendant to push under or withdraw the shelf containing the bed-pan from the hole in the mattress and wire sheet. (4) A simple mechanical arrangement working with a handle and screw for placing in position *from below* the cover for the hole in the mattress and wire sheet and taking care that it fits accurately so that the patient does not experience any edge, ridges, or projections.

I am, Sir, yours faithfully,
R. C. BROWN.

Preston, June 21st, 1925.